INDUSTRIAL ZONING IN VANCOUVER

by

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ABSTRACT

Reports published recently by the Planning Departments of both the City of Vancouver and the Greater Vancouver Regional District have referred to the suburbanization of industry and the need for an industrial land use policy for both the City and the Region. The City of Vancouver has expressed concern about the negative consequences of suburbanization of industry and adopted a policy favouring industrial development in the City.

In considering the factors which influence the supply and location of industrial land, the impact of planning legislation warrants investigation. Planning legislation is the major implementation tool of urban planning. The relationship between planning legislation and residential development has received considerable attention in the literature. Significantly less interest has been expressed in the impact of legislation on industrial land. The evolution of industrial zoning in Vancouver and its impact on the supply and location of industrial land in the city are the focus of this thesis.

Early zoning by-laws were established to protect residential and commercial areas from the encroachment of industry. Planning legislation in more recent times has reflected a policy toward industry in urban areas that has ranged from restrictive control to neglect. Vancouver's planning legislation as it applies to industrial areas allows office commercial uses to be developed in industrial areas. The impact of this practice on the pattern of industrial land use in Vancouver is examined.
Data from the City of Vancouver's Development Permit Records was obtained and showed a concentration of applications for office and office/retail developments in the city's inner city industrial areas. Data from the city's assessment records also confirmed a concentration of office and office/retail buildings in the city's inner city industrial areas. An examination of time series land use information showed that the supply of inner city industrial land was declining significantly. The data examined therefore, supported a conclusion that Vancouver's industrial zoning regulations permitted a process of land use succession to occur by allowing industrial land to be developed for commercial use. The principal impact of this permissive feature of the legislation was found to be in the city's inner city industrial areas.

The implications of the study's findings for public policy were then discussed. The arguments in favour of retaining the existing industrial zoning regulations were examined. These arguments focused on the growing importance of the service sector of the urban economy and the need to make land available for service related functions which typically are office and retail in nature. The arguments in favour of adopting legislation that is more protective of industry were also examined by exploring the unique role that Vancouver's inner city industrial areas play in providing "incubator" space for new and smaller industries.

The findings of the study strongly suggest that a significant research effort needs to be undertaken to provide insight into the long term economic and social consequences for the City of Vancouver of a process of land use succession in the city's industrial areas. Planning policies for the city's industrial areas should then be established followed by changes to planning legislation.
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CHAPTER I

INTRODUCTION

The Context

In a mixed public-private enterprise urban system, planning legislation controlling the use and development of urban land can be considered as having the function of establishing the "rules of the game" within which individuals and organizations who are active in the urban property market and whose activities influence the urban land use pattern must, by law, operate. Planning legislation can, therefore, be considered an intervention in the urban property market. The contemporary view is that such legislation is a means of implementing a predetermined rationally conceived plan and/or set of policies for the spatial development of an urban area. While this view is still the subject of some debate, the fact remains that legislation such as zoning by-laws and subdivision regulations, play an important role in determining the pattern of urban land uses and changes that occur within that pattern. Since urban land and buildings provide the space for activities to occur, the overall pattern of urban land uses and the supply of land for specific uses (i.e. residential, commercial and industrial) have a major effect on the social and economic life of urban areas. The changing pattern of urban land uses is therefore a concern to urban planning. In planning literature much attention has been given to the impact of planning legislation on the development of residential land. Significantly less interest has been expressed in the impact of legislation on the supply and development of industrial land.
Historically, public policy toward industry in urban areas has ranged from active encouragement, to neglect, to restrictive control. In the City of Vancouver and the Greater Vancouver area there has been a renewed interest in industrial land use policy in the past three years. Various reports have referred to the suburbanization of industry, the nature of Vancouver's industrial areas and the need for an overall industrial development strategy for the region. In July, 1977 Vancouver City Council established an Industrial Development Office because of its concern for the apparent suburbanization of industry. This renewed concern for industrial policy follows several years of neglect and arises from a fundamental belief that despite the growing importance of the service sector of the urban economy, industry is still important not only because its products are still in demand but also because of its contribution to a diversified tax base and a diversity of employment opportunities.

In seeking to understand the factors that determine the pattern of industrial land use and development in urban areas the impact of planning legislation warrants investigation. Indeed an understanding of the role of planning legislation in industrial land use is critical since such legislation is the implementation tool of public policy. This thesis seeks to contribute to such an understanding by examining the evolution of the industrial zoning provisions in Vancouver's Zoning and Development By-Law and the impact of these provisions on industrial land use in the city.

Historically zoning by-laws have permitted non-industrial uses in industrially zoned areas. In the language of the
zoning planner such by-laws are drafted in accordance with the principle of progressively inclusive zoning districts. Essentially what this means is that the range and number of uses permitted in the by-law's zoning districts is very restrictive for single family dwelling districts and becomes progressively more permissive in the multiple family and commercial districts. The industrial districts usually allow the broadest range of uses including both industrial and non-industrial. This method of drafting zoning by-laws has also been described as cumulative or hierarchial zoning with residential uses being considered the "highest" uses, industrial uses the "lowest" and commercial uses in the middle. In this context the terms "highest" and "lowest" are not used in an economic sense (i.e. highest return on investment) but rather, they refer to the presumed importance of the use or of protecting the use from encroachment by other less desirable uses. The reason why most by-laws have traditionally been drafted in this manner is because their original purpose was to protect single family residential districts and prestige commercial areas from the encroachment of industry.

These zoning principles were a major influence on the first zoning by-law passed by the City of Vancouver in 1930 following the amalgamation of Point Grey, South Vancouver and Vancouver. Their influence on the current Zoning and Development By-Law No. 3575, which was first passed in 1956, can also be easily recognized.

The Study

The evolution of industrial zoning in Vancouver and the impact of the current legislation on the location and supply of industrial land are the focus of this thesis.
Provincial planning legislation empowers the City of Vancouver to prepare and adopt an Official Development Plan for the city as a whole or any of its sub areas. There is at present no overall development plan for the city or for any of its industrial areas. An active local area planning program exists but not in the City's industrial areas. In search of industrial land use policy one turns to the Zoning and Development By-Law. The industrial district schedules in the by-law permit commercial uses in industrial areas. The By-Law, therefore, permits a bidding process between industrial and commercial uses subject to planning approval of individual development applications. Since office commercial uses are usually able to outbid industrial uses for land, a process of land use succession is permitted.

Chapter II examines in detail the development of industrial zoning in Vancouver. An historical approach is used since zoning developed over the past sixty years by a process of evolution. Many of the legislative provisions were imported from other jurisdictions and reflect the conventional wisdom of the day.

Chapter III presents the research methodology used. Data concerning applications for the development of office and office retail buildings in Vancouver's industrial areas in the period from January 1, 1971 to June 1, 1978 was compiled from the City Planning Department's Development Permit records. This information was tabulated by industrial area and illustrated on maps. Since the development permit data showed a concentration of land use succession activity in the inner-city industrial areas a comparison of the supply of inner city industrial land in 1968 and 1976 was also undertaken. In Chapter IV the results are documented and analysed for trends. Chapter V identifies and discusses
the implications of the findings for both public policy and professional planning practice. In particular the evidence concerning a possible incubator function provided by Vancouver's inner city industrial areas is examined. The final Chapter contains a summary and conclusions.

The Significance

The location and rate of land use succession affecting industrial land has many implications for the future of industry in Vancouver. For example, if the process is widespread and well established, there will be a continuing reduction in the supply of industrial land in Vancouver. A continuation of this trend therefore, has consequences for Vancouver's ability to implement formally stated goals and objectives to encourage "a healthy balance both in employment opportunities and in the City's tax base". The trend also has implications for the achievement of the Regional Government's objective of directing both commercial and industrial jobs to suburban areas. Consequently, replacement of industrial land with office/commercial uses in the central city is not in keeping with the objectives of the Regional Government. Part of the significance of the thesis is, therefore, found in its analysis of the extent to which Vancouver's Zoning Legislation is successful in implementing public policy with respect to industry and employment.

A detailed analysis of the basis for these policies is beyond the scope of this study. For years it has been part of the "conventional wisdom" of urban planners, urban economists, and municipal politicians to consider the presence of industry in the urban economy as a necessary prerequisite to a strong and diversified tax base and to continued
economic growth and stability. If one simply adopts the conventional wisdom without question, a process of land use succession from industrial to commercial use must be greeted with alarm and form the justification for public policy intervention. However, the issues are clearly more complicated.

Birch (1970) has suggested that central cities of metropolitan areas evolve into an "elite service center" -

Thus it can be assumed from the available evidence that, in aggregate, central cities will experience substantial growth in the white collar, service type job categories. As manufacturers, wholesalers and retailers settle elsewhere the effect of the growth in services will be to alter the mix of activities going on in central cities, which, in turn will quite probably have an influence on the kinds of people living there.5

If the City of Vancouver is shifting toward an urban economy which is specialized in the service sector there will be significant long term economic and social impacts for both the city and the region. There is some evidence to suggest that shifts in Vancouver's employment opportunities and residential population are taking place. For example analysis of the 1976 census has shown that not only has Vancouver's residential population declined since 1971 but there has been a shift in the composition of the population highlighted by a decline in the number of children and an increase in the number of persons between 25 and 44 and over 65.6

The fundamental question is whether the anticipated impacts of a transition from diversity to specialization are positive or negative from an economic and social point of view. A review of the literature reveals an alarming neglect of theoretical or empirical attention to the question of long term impacts. In commenting on Netzer's study of
differences in the property tax base between the central city and suburbs in American cities Heilbrun notes -

The casual observer may suppose that despite the dispersal of industry and middle and upper income population to the suburbs, the typical central city, with its towering C.B.D. and dense development must have a stronger property tax base than the suburbs. In fact, such is not the case.\(^7\)

Netzer's findings were sensitive to the age of the metropolitan area and densities in the central city and suburbs.

Bahl and Greytak, in a study of the impact of changes in employment structure on municipal revenues, have reported findings specific to New York City -

What these results would appear to indicate is that the changing role of the core city - to a service orientation and away from a manufacturing orientation - in and of itself does not have an unfavorable effect on city revenues. At least this is the case for New York City.\(^8\)

In addition to impacts on municipal revenues, a shift toward economic specialization resulting in a change in the composition of the population of the central city will have impacts on municipal costs. For example, if the anticipated decrease in population is not accompanied by a decrease in municipal costs, the cost per capita of municipal services will rise. Additional costs such as Public Transit would be expected to be incurred because of the high density form of development. Depending on the composition of the population social service costs would also be incurred. For example if the central city continues to provide a supply of reasonably priced accommodation compared to the suburbs, part of the residential population will be composed of lower income people who require public services.
In Vancouver's context Tennant (1976) has argued that industry plays a positive role in Vancouver's economy by providing a broader range of employment opportunities, by contributing to the civic tax base, and by providing the stimulus to further economic development. Tennant's arguments provide a promising line of thought in searching for the long term impacts of land use succession from industrial to commercial use. It can be argued, for example, that if industrial land is converted to office/commercial use, the long term impact will either be unemployment for those workers who possess "blue collar" skills or a significant shift in residential location or commuting patterns as industrial employment opportunities that exist in the suburbs are sought by central city residents. The argument regarding industry's contribution to the tax base requires qualification since the assessed value of office/commercial structures is frequently higher than that of the industrial buildings that are displaced. Likewise the economic growth argument must be qualified since the City of Vancouver, while a politically separate entity is in fact part of a larger regional economy. Displacement of industry from the central city does not, therefore, automatically have a negative impact on economic growth in the central city. It could however, be argued that piecemeal displacement of individual industrial firms disturbs the intricate pattern of linkages and, therefore, has secondary affects on industrial firms which remain. If the regional economy is affected by industrial relocation, the economic consequences are more significant.
One must honestly conclude that the long term economic and social consequences of a conversion of industrial land to commercial use in Vancouver are dependent on many variables and therefore uncertain. The limited evidence from previous research suggests that the consequences for the civic tax base, municipal revenues and municipal costs are dependent upon the characteristics of each central city. Tennant's arguments in favour of retaining industry in Vancouver are significant but need further development. This study contributes to the larger debate by documenting the history and evolution of planning legislation as it applies to industry in urban areas. As presently structured the composition of this legislation favours a conversion of industrial land to commercial use. The study also provides specific data on the location and extent of land use succession in industrial areas. It also provides insight into the urban planning process in Vancouver and its impact on industrial land. Finally, the discussion about the significance of the study's findings clearly demonstrates the need for additional research regarding the economic and social consequences of urban economic diversity and economic specialization in the service sector.
Footnotes for Chapter I


Industry and the Livable Region (Vancouver, October, 1977).

2 Industry and the Livable Region.

Manager's report to Vancouver City Council. 

4 Industry and the Livable Region.


6Phil Mondor, "Vancouver's Changing Age Composition" *Quarterly Review*, (Vancouver: City of Vancouver, Planning Department, Vol. 5 No. 2, April, 1978).


CHAPTER II

THE STATUS OF INDUSTRY IN VANCOUVER'S ZONING BY-LAWS

AN HISTORICAL PERSPECTIVE

In the period since 1930 the City of Vancouver has had only two major zoning By-Laws. Both of these By-Laws, the Zoning By-Law passed in 1930 and the Zoning and Development By-Law passed in 1956, reflect the conventional wisdom of the day with respect to methods of land use control. Thus, in order to understand the form and content of these By-Laws from the point of view of industrial land uses, it is necessary to provide an overview of the changing conventional wisdom in North America regarding industrial zoning.

The Evolution of Industrial Zoning in North America.

The location and regulation of industrial land uses have frequently presented the urban planner and politician with a dilemma. Industry's contribution to employment opportunities, municipal revenues and the city's economic base has been acknowledged by municipal politicians and supported by urban planning theory and research. A strong industrial base has traditionally been considered to be a necessary prerequisite to economic stability and urban growth. In order to attract industry, municipalities have occasionally offered incentives such as tax concessions, provision of physical infrastructure and capital write downs of the price of industrial land. Hason (1977) has suggested that overly generous municipal incentives at the turn of the century created some of the urban conditions that resulted in the need for more public control over the use of urban land.
Concentration and congestion were the inescapable outgrowths of policies undertaken by municipal governments in inducing industries to locate within cities during the preceding decades. Cities offered lavish tax concessions, and encouraged the construction of railroads which resulted in dramatic reduction of freight costs. Railroad terminal facilities and maneuvering yards saturated downtown locations which made them advantageous for industrial uses as well as for warehousing, wholesale, and allied activities. For the great number of workers who followed the industries into the cities, the problem of housing was "solved" by building shanties and by converting existing central facilities into rooming houses, hotels and tenement houses which rapidly formed the slum sections surrounding the industrial core.

Hason's comments apply in varying degrees to cities in both the U.S. and Canada.

The other view of industry, which had its origins in the early days of zoning at the turn of the century as well, was to consider industrial land uses as a nuisance. Given the industrial processes of the day, the absence of urban planning and land use controls, and the inability of the urban land market to provide for a separation of incompatible land uses, this view of industry in urban areas had considerable justification. The public policies which emerged from this view were incorporated in the early zoning by-laws which protected residential and commercial areas from the encroachment of industry.

The earliest public policies controlling the location of industry have been traced to Germany -

It was Napoleon who first imposed on conquered German towns a stipulation that dangerous and unhealthy industries be segregated as a tool for ameliorating health conditions among city dwellers and especially recruits into the German army. Eventually the system became Imperial German Law and thereafter improved considerably.

Prior to the emergence of land use control legislation in North America, the private citizen could seek relief from
the impact of offensive land uses under the common law of nuisance. With the rapid growth of urban areas such protection was clearly inadequate. The first public policies respecting land use emerged with the practice of districting. Under this technique a municipality would pass laws prohibiting land uses such as slaughter houses, glue factories, bakeries and laundries from certain designated districts within its jurisdiction. Some districting ordinances also contained regulations regarding the height of buildings. However, the New York City Zoning Ordinance of 1916 is considered by zoning historians to be the first comprehensive zoning legislation in North America.¹ (Babcock, 1966. Delafons, 1969). This ordinance was passed partly as a result of the concerns of merchants in the city's fashionable retail garment district. The merchants had two concerns. Firstly the encroachment of the garment manufacturing industry into the retail district (because of linkages) was affecting business and property values. Secondly, the height and mass of nearby office buildings was depriving the district of sunlight. (Hason, 1977). Support for land use and development controls spread when it was pointed out that residential property values were also affected when incompatible land uses were allowed to encroach into residential areas. The New York Ordinance of 1916 attempted to resolve these problems by creating three land use districts - a residential district, a commercial district and an unrestricted district. A zoning map established the location and boundaries for these districts. In the residential district non-residential uses were prohibited. In the commercial district, industrial uses were prohibited but residential and commercial uses were allowed. The unrestricted district was, therefore, the only district in which industrial land uses were allowed. However, because
there were no use restrictions other uses were allowed as well. Subsequent amendments to this ordinance replaced the unrestricted districts with industrial districts. However, both the stigma and the fact of being the "last" district in the hierarchy and, therefore, the catchall, remained. The concerns regarding the heights of buildings were dealt with by imposing regulations on the building form. These two components - use restrictions and regulations concerning the form of development have formed an integral part of zoning by-laws since that time.

The period from 1916 to 1940 saw the rapid spread of zoning ordinances to other cities and towns in the U.S. The adoption of zoning ordinances was aided by the U.S. Department of Commerce when its Secretary Herbert Hoover established an Advisory Committee on Zoning. Sitting on the committee was Edward Bassett who had chaired the two commissions in New York that had produced the New York Ordinance. By 1924 the Advisory Committee had drafted a Standard State Zoning Enabling Act which could be used by states that wished to give their cities the power to pass zoning ordinances. In 1926 a Standard City Planning Enabling Act was also prepared to encourage the development of urban planning in conjunction with zoning. In 1921, 78 American cities had adopted zoning ordinances. By 1937, the figure had risen to 1322 cities. (Delafons, 1969). This proliferation of zoning legislation was due to the fact that zoning ordinances could be "exported" from one city to another and, after changes to the zoning map and text to reflect local topographical and political realities, passed into law. Thus the attitude toward industry as reflected in the early ordinances was also exported to other cities on the continent including Canadian cities.

The initial reaction to zoning as a means of land use control was overwhelmingly, but not unanimously, positive.
Delafons (1969) describes the attraction of zoning as follows -

The principle of controlling land use by districts was found to be a convenient way of protecting residential districts without the troublesome and expensive litigation required to obtain injunctive relief against nuisances.5

However, he also identifies one of the major weaknesses of the New York Ordinance as follows -

Perhaps the most serious defect was the failure to match the exclusion of industry from residential areas with exclusion of residences from business or industrial areas. The one substantial advantage of the zoning system - preventing confused and incompatible development - was thus severely compromised.6

Babcock (1966) is critical of the cumulative nature of the early ordinances as well -

All the uses permitted in the "highest" single-family district were also permitted in the other three districts. Uses permitted in the "second", multiple-family district, were also permitted in the business and industrial zones until the industrial zone became the garbage pail for all uses, including residences.7

With the emphasis of the early zoning ordinances being on the preservation of residential and commercial areas it is not surprising that industrial land users did not immediately support zoning. There are several reasons why -

1. Zoning did nothing to protect property values in some industrial areas because it did not prevent the encroachment of land uses incompatible with industry e.g. residences. The result was a continuation of the chaos and congestion characteristic of unplanned, uncontrolled land development.

2. Strategically located industrial areas close to the Central Business District experienced an increase in land values as a result of bidding from more intensive users. The result was to force industry out or make expansion costly.

3. Land zoned for industry or unrestricted use was frequently located on the periphery of urban areas,
was of poor quality, and unserviced. These features imposed site and transportation costs on industries forced to relocate. Furthermore, there is evidence (Ref. Babcock, Ibid) that many municipalities engaged in the practice of overzoning undeveloped land for industrial use in the interests of increasing property values and municipal tax revenue. Because of the structure of zoning by-laws the excessive supply of industrially zoned land was allowed to be developed in a piecemeal, haphazard fashion by non-industrial uses. The efficiency of the area for industrial use was, therefore, compromised.

Notwithstanding the lack of enthusiasm on the part of industrial land users, zoning had become the principal land use control device in North America, by the beginning of World War II. To those with interests in the urban land market zoning was viewed as a means of stabilizing and preserving land values. Others, including urban planners had originally been attracted by its potential as a means of implementing comprehensive land use planning proposals. For the planners preparation and approval of a zoning ordinance was, therefore, the final step in a planning process which also included the preparation of a comprehensive land use plan for the city to resolve existing problems and accommodate future growth in an orderly fashion. The tendency of many cities to import and adopt a zoning ordinance with no concern for a comprehensive land use plan, was therefore, cause for some disillusionment and further evidence of the prevalence of the property value theory of zoning.

In the period following World War II significant changes in the conventional wisdom concerning zoning took place. Economic growth and industrial expansion in the post-war period
led to an increase in the rate of take up of industrial land and raised concerns about urban land shortages - particularly industrial land. These concerns had a profound impact on industrial zoning techniques. Three fundamental criticisms of the pre-war zoning system as it affected industry, could be identified.

1. The hierarchial nature of zoning ordinances continued to place industry at a disadvantage relative to residential and commercial land uses. Residential land uses were incompatible with many industries, and commercial land uses successfully outbid industry for land on the urban property market. Both factors affected the supply of industrial land.

2. The practice of listing uses that were prohibited in each district was considered to be too negative and was also incomplete. No list could anticipate new businesses or industrial processes that would emerge as a result of technological change.

3. A classification system based on the name of the land use missed the whole point of zoning. It was the impacts of the land use on other land uses that was important. A more specific means of classification of land use based on actual impacts was required. (Blumenfeld 1962, O'Harrow 1951, Guttenberg 1959).

In 1950 six national organizations came together to establish the National Industrial Zoning Committee. One of the first actions of this committee was to prepare and issue a pamphlet entitled Principles of Industrial Zoning. In the foreword of this pamphlet the disenchantment with the status of industrial land uses compared to others is reflected-

"...in the zeal of citizens and technicians to extend 'protection' to some types of land use, other types of land use have sometimes suffered, even to the
point of destroying part of the birthright of a community - its basis for making a living."
The twelve principles outlined in the pamphlet were designed to give industry an equal status in land use and zoning plans.
The Twelve Principles Were:

**Principle One**: Most communities require a certain amount of industrial development to produce a sound economy.

**Principle Two**: Zoning controls are basic tools in the reservation of space for industry, guidance of industrial location into a desirable pattern, and provision of related facilities and areas needed for convenient and balanced economy.

**Principle Three**: Industrial use is a legitimate land use possessing integrity comparable to other classes of land use established under zoning and is entitled to protection against encroachment.

**Principle Four**: Through proper zoning, industrial and residential areas can be good neighbours.

**Principle Five**: Industry will continue to grow and most industries will require larger areas in the future.

**Principle Six**: There is need for a reclassification of industry based on modern manufacturing processes and the prevailing policy of plant construction so as to determine the desirability for inclusion in a given area.

**Principle Seven**: Industrial potentialities of lands bearing a favorable relationship to transportation should be recognized in the zoning process.

**Principle Eight**: Industrial zoning and highway planning should go hand in hand.

**Principle Nine**: Special consideration should be given to the street layout in industrial areas.

**Principle Ten**: Zoning ordinances should be permissive rather than prohibitive.

**Principle Eleven**: A good Zoning ordinance should be sufficiently definite to convey to a landowner a clear
concept of what he can do with his land.

**Principle Twelve:** Industrial zoning can be most effective when considered on a metropolitan basis.⁹

The "cause" of giving industrial land use an equal place in planning and zoning received further support in a research project undertaken by Dorothy Muncy and published by both the Urban Land Institute and the *Harvard Business Review*.¹⁰ Muncy's survey of 220 industrial plants showed that the amount of land required for industry was increasing because of a) the trend to single storey construction with more landscaping and open space on the site, b) increased facilities for employees such as parking, c) off-street loading for truck and rail and, d) more self-sufficient plants. Muncy concluded that

The underlying cause of industrial site shortage is the lack of civic understanding of industry's operations. This results in zoning codes and land use policy hostile to the growth of manufacture. Not only is industrial land given no protection from residential encroachment, but unrelated commercial structures, and even junkyards have been allowed to pre-empt the dwindling supply of industrial land near the centre of the urban region.¹¹

As a result of growing criticism, which had begun prior to the war, about the approval of residential uses in industrial areas this permissive feature of zoning ordinances was gradually removed before and during the 1950's. Significantly the major argument against permitting residential uses in industrial areas was that industrial areas were unsuitable as places to live. Concern for the efficiency of industrial areas was still not widespread. Furthermore, the latter part of the zoning "hierarchy" still remained, i.e. commercial uses were still allowed in industrial areas.
The concerns about the inadequacy of prohibited lists resulted in the practice of identifying the permitted uses in each of the zoning districts. Such lists made the zoning legislation more definite, more positive and more understandable.

Dissatisfaction with the industrial classification system used in zoning ordinances was behind the development of performance standards as the basis of land use classification in zoning ordinances. The advocates of performance standards maintained that it was not the name of the industry that should be the important criteria in zoning. The fundamental issue was the effect of the land use on other land uses. With respect to industrial land uses, O'Harrow (1951) suggested that performance standards could be developed for the following eleven impacts: noise, smoke, odour, dust and dirt, noxious gases, glare and heat, fire hazards, industrial wastes, transportation and traffic, aesthetics and psychological effects. Industries that "performed" well against standards in these impact areas could be given more latitude in their location under a zoning by-law drafted in accordance with these standards. The initial reaction to performance standards was enthusiastic. Chicago and New York both rewrote their zoning by-laws in the 1960's to incorporate such standards. The new Chicago ordinance still maintained residential, business and industrial categories. Three industrial districts were established. The distinction as to which district an industry was permitted to develop in was made on the basis of that industry's compliance with performance standards rather than a determination that the industry was a "light" industry or a "heavy" industry. (Babcock 1957 in Andrews 1972).
The relative simplicity of measurable performance standards was attractive when compared with the imperfections and "grey areas" that had been discovered by trial and error with the older classification system by industrial name. Furthermore, such standards not only allowed for but anticipated the changes in industrial technology that were allowing quieter less offensive industrial plants to be constructed. However, two significant problem areas have always prevented the more widespread use of such standards. The first problem area is that of deciding on what the standards should be in each impact area. Should this decision be left to "experts" when the impacts may very well affect everyone differently? Secondly, the administration of such standards requires a good deal of technical sophistication and enforcement costs would therefore be high. Because of the technical problems and costs of administration, performance standards are only used to a limited extent or have only been implemented in the larger metropolitan areas. While not all cities were willing or able to convert their zoning ordinances to a performance standard basis, a trend toward the creation of exclusive industrial and commercial districts was noticeable by the late 1950's (A.S.P.O. 1956, Bentz 1957).

In the late 1950's the planned industrial park emerged as the latest innovation in industrial land use and land use control. Usually located adjacent to a major arterial highway and away from the congestion and competition for land characteristic of inner-city industrial areas these parks had many features attractive to industry. The parks were located on land zoned for industry. However, supporting the sometimes tenuous nature of the industrial zoning were
additional private controls over the use of the land in these parks. If the land was under one ownership with leasehold tenure available to the occupants, the leases incorporated additional controls over land use and development. If the land had been developed by one owner (usually a land development company) and was available for sale, the title was subject to a restrictive covenant that ran with the land. Through this combination of public and private land use control the industrial tenants were offered considerable protection from encroachment by incompatible land uses.

It is ironic that, during a time of increasing opposition to the "red tape" and restrictions associated with increasing public land use controls, industrial land users were and still are quite prepared to submit to a far more stringent list of private controls. An A.S.P.O.Z publication on planned industrial districts in 1957 listed some of the typical restrictions included in restrictive covenants: use, fumes and odour, construction and design, landscaping, building setbacks, loading docks, parking facilities, right-of-way easements, erection of individual power plants, billboards and signs, fences and walls, mineral reservations. Although the price of land in industrial parks tended to be higher than other industrial land available on the market, many industries were prepared to pay the price and accept the controls in return for the security of tenure in these parks compared with other industrially zoned land. In 1971 there were over 1000 industrial parks operating in the United States and almost 500 in the United Kingdom (Smith 1971).

One of the most recent developments in industrial zoning is the inclusion of industry (usually light industry) as a permitted use in some of the newer mixed use zoning
categories. Examples of such categories are the direct control district (D.C.) and in Vancouver the comprehensive development district. This zoning category was created to allow specific regulations for unique, large scale urban developments on specific sites to be established in law and enforced. Because of the scale and interdependent nature of the development, traditional zoning categories are not applicable. The False Creek Comprehensive Development District is an example. Light industry is included in the list of permitted uses. However, since residential and commercial uses are also included, the Comprehensive Development District does little to encourage or protect industrial land uses.

**Industry and Vancouver's Zoning By-Laws**

The evolution of land use controls in Canada has been less well documented than in the United States. Nevertheless, the research that has been undertaken has revealed at least three characteristics of the Canadian experience. These characteristics are helpful in understanding the status of industry in land use control legislation in Canada.

In the period up to World War II zoning by-laws borrowing heavily on the American model were the most prevalent form of public land use control (Levin 1957). At the turn of the century many of the same urban conditions as existed in the U.S. also existed in industrialized eastern Canada. Canadian participation in the national conferences on City planning held annually in the U.S. from 1909 onward was probably one of the vehicles for "importing" the American legislation. Another vehicle was the use of American planning consultants.
The second characteristic of Canadian zoning was that it tended to lag behind the American developments. When the Americans were in the process of developing zoning ordinances to control the location of industry, they looked with envy at the progress made in Germany. Proponents of zoning legislation in Canada looked upon the U.S. experience in much the same way as the Americans viewed German accomplishments. An article appearing in the Journal of the Town Planning Institute of Canada in 1931 estimated that while 900 towns and cities in the U.S. and Britain had been zoned, in Canada there were less than a dozen.13

The third characteristic of the evolution of land use controls in Canada was the influence of the British system of development control. This influence became apparent in certain Canadian cities, including Vancouver, in the period following World War II when a significant number of British planners emigrated to Canada.

The City of Vancouver's experience with zoning and development control legislation does not vary significantly from the Canadian pattern. The present political boundaries of the city were established in 1929 when the old city of Vancouver amalgamated with the municipalities of Point Grey and South Vancouver. Prior to this amalgamation each of the municipalities had passed a by-law to control land use and development. The City of Vancouver Planning Commission appointed Harland Bartholomew and Associates of St. Louis, Missouri, in August 1926 to prepare a "Comprehensive Town Plan for the City of Vancouver and a Regional Plan of the contiguous or adjacent territory".14 Hardwick (1974) gives the following explanation for Bartholomew's appointment -

Prompted by the business fluctuations, some members of the business community, particularly those with major downtown investments, became concerned
about the maintenance of land values. In the 1920's they joined with the "city beautiful" advocates rooted in the Point Grey municipality to promote civic planning as a means of guiding the physical growth of the city. These long term property owners were aware that the boom and bust cycles were undermining their ability to maintain property values and, in turn, their personal and corporate wealth.15

The concern for property values was also reflected in the fact that, as a first step, the consultants were asked to prepare a zoning by-law. The consultants pointed out the value of preparing a comprehensive plan prior to a zoning by-law. However, as a temporary solution "and largely to prevent the intrusion of apartment houses in single or two-family residential areas"%, an interim zoning by-law was prepared and approved by the Town Planning Commission, recommended to Council, and became law on 5th February, 1927. Under the by-law, which was in force until December 17, 1928, only three districts were established: one and two family districts, apartment districts and unrestricted districts. "In the unrestricted districts no regulations of any kind were prescribed".16 As with the New York Ordinance, industry was prohibited from all but the unrestricted districts.

A more comprehensive zoning by-law was approved by Vancouver City Council on December 17, 1928. The scope of the new by-law was explained in the preamble suggested by the consultants -

"A By-Law to regulate and restrict the location and use of buildings and the use of land within the City of Vancouver; to limit the height and bulk of buildings; to prescribe the size of yards and other open spaces and the maximum density of population and for these purposes to divide the city into districts.

Whereas, after considering the recommendations of the Vancouver Town Planning Commission, it appears
advisable and expedient to make regulations and divide the city into districts as hereinafter provided, pursuant to the Town Planning Act, having due regard to:

(a) The promotion of public health, safety, convenience and welfare.
(b) The prevention of the overcrowding of land and the preservation of the amenity of residential districts.
(c) The securing of adequate provisions for light, air and reasonable access.
(d) The value of the land and the nature of its use and occupancy.
(e) The character of each district, the character of the buildings already erected and the peculiar suitability of the district for particular uses.
(f) The conservation of property values and the direction of building development.

With minor modifications to the regulations and changes to incorporate the zoning plans for Point Grey and South Vancouver, this by-law was passed by the City Council of the amalgamated City of Vancouver on June 6, 1930 and, therefore, became the first zoning by-law of the current City of Vancouver.

This by-law reflected the conventional wisdom of the day with respect to zoning principles. It was hierarchial in structure and provided the most protection to single family residential districts. Two industrial districts were established: a six storey Light Industrial District and a Heavy Industrial District. Uses permitted in the light industrial district included all uses permitted in residential and commercial districts plus light industry. The definition of light industry was made by providing a list of names of so-called heavy industries which were prohibited. All other industrial uses were, therefore,
automatically permitted. In the heavy industrial district there were no use restrictions except that dwelling units required the approval of City Council. A section of the by-law entitled "Special Conditions" provided a further list of "businesses, undertakings, trades or industries" requiring site approval by City Council. Thus, apart from the special approval required for dwelling units in heavy industrial areas, the by-law allowed residential and commercial uses in industrially zoned areas. During its life, the by-law was subject to minor amendments either to change regulations or change the zoning district boundaries. In 1951 the special approval required for dwelling units in heavy industrial districts was extended to apply to light industrial areas. Other than this change, the provisions with respect to industry remained as drafted until 1956 when a new Zoning and Development By-Law was passed.

Before proceeding with an analysis of the 1956 By-Law, it is well to document some of the principal features of the Bartholomew Plan for Vancouver since the Zoning By-Law of 1930 was intended to implement it. In the letter of transmittal Bartholomew described the time frame as follows:

In the plan submitted herewith, a future growth of approximately one million persons has been anticipated. When that population has been reached, a new and larger plan will become necessary. A smaller plan would be unworthy, and, at best, a poor expedient. A larger plan would be more or less difficult for present adoption and realization. 16

Contrary to the practice in many other cities where land zoned for industry was of poor quality and poorly located, the location of the industrial districts was "of first consideration". A general study of the Region
identified areas suitable for industrial development on the basis of access to water and rail transportation and taking into account "the changes that may be expected in the future". The principal industrial districts designated by Bartholomew were: The Burrard Inlet Waterfront, the Powell Street area immediately adjacent to the south extending to the area east of False Creek (False Creek Flats), the Clark Drive area, the Grandview Highway/Boundary Road area, False Creek north and south side, Granville and Burrard, Arbutus and 12th, and the Marine Drive area. These areas served as the supply of industrial zoned land from 1930 to 1970 when significant changes began to occur as a result of rezoning.

The completion of the Bartholomew plan at a cost of $40,000. (1929 dollars) and passage of the zoning by-law placed Vancouver in the forefront of planning progress in Canada. Hardwick summarizes Bartholomew's plan as follows:

Bartholomew's plan was for a core-oriented, sectorally segregated, radially organized city. This built naturally on the established patterns in Vancouver, and was consistent with the main academic and professional views of that time. 19

The plan and the By-Law which were administered by a Town Planning Commission guided the growth of the city until the 1950's.

The decade of the 1950's saw two significant changes in planning and zoning administration in Vancouver. In 1952 a planning department was established as part of the municipal government organization. 20 This department assumed responsibilities previously held by the Town Planning Commission whose role was significantly adjusted. The other significant change was the preparation and approval of a
new Zoning and Development By-Law. The new By-Law was prepared because "the legal administrative framework of the zoning by-law (still in its 1930 form) was totally inadequate to cope with a changing city". The new by-law incorporated "most of the modern techniques known at the time".

Writing in 1963, seven years after the new by-law was approved, the Planning Department explained that a new Development plan for the city was intended to accompany the by-law:

No attempt was made at that time (i.e., 1956) to revise the boundaries of the zoning districts of the city. It was felt that a comprehensive revision of the zoning map should only be done after preparation of a 20 year development plan. This plan is still incomplete and is one of the reasons for so many individual rezoning applications at the present time - a situation not unlike that prior to 1930.

The new by-law had added the words "and Development" in order to replace a negative approach to the control of development with a positive one. Under the old by-law it was not necessary to seek planning approval for most developments. If the proposed use and development complied with the zoning by-law, a building permit could be issued. In order to obtain more flexibility and control over development, and in order to assist with implementation of the intended 20 year development plan, a system of development permits was introduced. For most developments a development permit was now required before a building permit could be approved. The development permit application required the approval of a designated planning authority.

Another feature of the by-law was the replacement of the lists of permitted uses (for some districts) and prohibited uses (for others) with a consistent approach of listing all the permitted uses for each district. This
feature was one of the "modern techniques" incorporated. The lists of permitted uses were divided into two categories. A list of main district uses came first. Development permit applications for uses on this list were automatically approved if the proposed use complied with the regulations in the by-law. A second list contained conditional uses or uses subject to special approval. On this list were uses "which might be accepted in a district subject to special safeguards".²³

The Zoning and Development By-Law passed in 1956 has undergone numerous amendments but is still the principal means of land use control in Vancouver. There has been little change since 1956 in the provisions with respect to industry.²⁴ The former six storey Light Industrial District has been renamed the M-1 Industrial District (light industry), while the Heavy Industrial District is now called the M-2 Industrial District (heavy industry). Most of the boundaries for these districts had been established with the old Zoning By-Law of 1930. In the lists of permitted uses in industrial districts there is evidence of a commitment to the creation of exclusive industrial zones. Residential uses are not permitted. However, the list of conditionally permitted uses includes both "office buildings" and "retail store, business or undertaking".

The reason why these two commercial uses were included has not been documented. The most obvious explanation is that of the zoning hierarchy. Changing conventional wisdom had resulted in the removal of residential uses as permitted uses in industrial areas. Having accomplished that, the remainder of the hierarchy was left intact. Supporting
this conclusion is the fact that, under the new by-law industrial uses were not allowed in commercial areas. It may also be that the architects of the new by-law intended to approve only those office and retail commercial uses that were linked with the nearby industries. However, as the data presented in Chapter 4 will show, this section of the by-law has generally received a much broader interpretation.

The regulations in the Industrial Districts do not discriminate between industrial and non-industrial uses. In both the M-1 and M-2 Districts, the height limit on buildings is not to exceed 100 feet. The permitted floor space ratio is not to exceed 5.00. The by-law makes no distinction in these two regulations between office buildings and industrial buildings. However, because these non-industrial uses are subject to the special approval of the Director of Planning, additional conditions and regulations may be imposed. There are also regulations in both district schedules concerning accessory buildings and accessory uses. An accessory building is not to occupy an area greater than 10% of the site and is not to be over 12 feet in height. An accessory use (which includes offices on the same site as an industrial use) is not to occupy an area greater than one-third of the total gross floor area of all the buildings on the site.

In 1976 a new industrial district M-1A was established. The district is described as a light industrial district in a residential community. The new district arose as a result of local area planning activity in Kitsilano. The two block industrial zone in the northeast corner of Kitsilano (bounded by Burrard, 1st Ave., Cypress and Cornwall)
is the only area presently zoned M-1A. The M-1A district schedule imposes tighter restrictions on industrial land use than is the case in M-1 and M-2 districts. All uses are conditional and therefore subject to the special conditions and regulations imposed by the Director of Planning with regard to landscaping and the design, character and choice of building material in relation to adjoining residential land. A height limit of 60 feet rather than 100 is imposed and there are more stringent regulations with respect to front, side and rear yards. The floor space ratio is 5.00 as in other industrial districts.

As a result of recent changes to the by-law light industrial uses are permitted in other districts. The most significant of these in terms of land area are the False Creek Comprehensive Development District (FCCDD) and the Downtown District (D.D.). However, in both of these districts the lists of permitted uses are deliberately very general because area development plans have been drafted for both areas and these plans, which are much more specific, are intended to be a guide to the approving authority. The area development plans do not anticipate industry as a major land use. They provide for either exclusive residential or commercial uses or mixed uses. Official development plans have been drafted for other areas of the city as well (e.g. the West End). However, there are no official development plans for any of the industrial areas. Neither is there an official development plan for the City of Vancouver as a whole.27

The first part of this Chapter has documented the changing nature of conventional wisdom with respect to zoning practice in general and industrial zoning in particular.
It was the contention of urban planners that zoning was the vehicle for implementing a rational land use plan for the city. To any definition of rationality in this context must be added the caveat that residential land uses would enjoy a preferred position while industry had an inferior status. The knowledge that the City of Vancouver imported the conventional wisdom of the day in preparing its Zoning By-Law of 1930 and its Zoning and Development By-Law of 1956 is helpful in understanding the rationale behind the industrial district schedules in the current By-Law. The 1930 By-Law was influenced by American Zoning practices. The 1956 By-Law had elements of zoning and development control, the latter originating in Great Britain.

In the next Chapter the effects of this legislation, and the planning decisions accompanying it, on the location and supply of industrial land in the city are explored.
Footnotes for Chapter II

1 Each By-Law has been amended on numerous occasions. However, these amending By-Laws did not change the land use control technique outlined in the main By-Law. Rather they introduced zoning district boundary changes, additional district schedules and official development plans, or administrative changes.


3 Ibid. p. 7.

4 Comprehensive in the sense that it covered the entire city.


6 Ibid. p. 23.


8 The agencies were the American Society of Civil Engineers, the American Institute of Planning, the Association of State Planning and Development Agencies, the American Railway Development Association, the American Industrial Development Council and the Society of Industrial Realtors. A.S.P.O. later replaced the A.S.P.D. on the Committee.


The term performance standard is borrowed from building code terminology. In that context it refers to the ability of a certain building material or method to withstand or measure up to certain criteria.

The main academic view of the day with respect to city growth and land use patterns was Park and Burgess' theory of concentric circles. This theory was first published in 1925 in an article by E.W. Burgess entitled "The Growth of the City" which appeared in the book *The City* edited by R.E. Park, E.W. Burgess and R.D. MacKenzie (Chicago: University of Chicago Press).

Establishment of the Department has been recommended in a study prepared by Professors Bland and Spence^2Sales of McGill University.
22 Ibid. p. 2.


24 The industrial district schedules have been reproduced as Appendix A.

25 City of Vancouver, Planning Department, Zoning and Development By-Law No. 3575. (Vancouver, 1956.) p. 248 Sections E & F, p. 262 Sections E & F.

26 Ibid. p. 47 Sec. 1 A (65), p. 261 Sec. 1 A (77).

27 The provincial planning enabling legislation, the Vancouver Charter (S.B.C., Ch. 55, 1953) gives the city authority to prepare and approve such plans for the entire city or certain areas but this is not a mandatory requirement.
CHAPTER III

RESEARCH METHODOLOGY

This Chapter outlines the research methodology used including sources of data, methods of collection and the possible limitations.

Since this study is concerned with the impact of a regulatory device (i.e. the City of Vancouver's Zoning and Development By-Law) on the pattern of land use in the City's industrial areas, data with respect to the operation of the By-Law and data with respect to land use in the industrial areas were collected. The data came from original and secondary sources including an analysis of information contained in previously prepared reports. The principal data sources, the rationale for their use and their limitations are now outlined.

The principal source of data for this study was the development permit records of the City of Vancouver. As mentioned in the latter part of Chapter II all development in the City of Vancouver must be preceded by successful application for a development permit. The information contained on the application portion of the permit includes the zoning of the subject property, the location by municipal address and a general description of the proposed development. The information contained on the approval or refusal portion of the permit confirms the development which has been approved or the reasons for refusal. Thus by reviewing the permits it was possible to identify those applications that were for new office buildings or office/retail buildings or conversion of existing buildings to
office/retail use on land that is zoned for industrial use.

Development permit applications filed in the period from January 1, 1971 to June 1, 1978 were chosen for review. As noted later in this Chapter information with respect to land use in industrial areas for 1969 was available in a previously prepared report. While 1970 would have been the logical starting date for data collection the year happened to be one in which a major construction strike occurred thereby abnormally affecting development activity. Therefore, the starting date for data collection was established as those development permit applications filed on or after January 1, 1971.

It is considered that the intervening 7½ years to June 1, 1978 provided a sufficiently broad time frame to identify trends and draw conclusions. In this period of time approximately 25,000 development permit applications were filed. Each application for an office building or combined office/retail use in an industrially zoned area was noted and a record made of the zoning, municipal address, particulars of the development and the date of approval or refusal. While this data is generally considered to be reliable, there is a possible limitation arising from inconsistency and vagueness in the description of the proposed use. While most applications left no doubt as to the proposed development (e.g. "to construct office building" or "to construct office building with retail on the main floor") others required further interpretation and may have been missed. An example would be an application for a warehouse with offices. Some of these applications required further scrutiny in order to determine whether the offices are ancillary to the warehouse (as required in the
by-law) or whether because of the relative square footage of office and warehouse, the application was really for a commercial office building with some warehouse space. It was possible to resolve some questionable cases by discussion with Planning Department staff. Other cases were recorded on the permit as refusals because of the excessive square footage for office use. It should also be noted that the issuance of a development permit does not guarantee that the applicant will proceed with the development, or that the development, once constructed, will legally remain in exactly the use for which it was built. The development permit data's principal purpose is to indicate the activity of the regulatory legislation and to point out the industrial areas of interest to office and retail commercial developers. While it also has value in indicating land use trends, other data has been collected that is specifically intended to document the land uses in industrial areas. The development permit data is illustrated on Map II and listed by industrial area in Table I.

Since the development permit data is only indicative of a trend and is limited in time frames, further substantiation of the incidence of office and office/retail developments in industrial areas was obtained by making use of data available in the property tax roll. An analysis from the property tax roll of all industrial and commercial buildings in the city by municipal address was made available to the writer. A series of codes identified the actual use of the building as recorded on the property tax file. Since a code was used for "office building (primary use)" and "store(s) and offices", and the zoning of the land was also given, it was possible to identify those buildings of interest to this study which were located on land zoned for industrial
use. This information is considered for the most part to be reliable and current since it uses current assessment records and 1978 zoning boundaries. However, it is subject to the limitations arising from the judgement of the assessor. The data has been partially aggregated by industrial area and is listed on Table III.

Information obtained from development permit records and the property tax files shows that the location of office and office/retail buildings in industrial areas is concentrated in the industrial areas at Arbutus and 12th Avenue, Granville and Burrard Streets, Cambie and 2nd Avenue, and Powell Street. Having identified these areas, an attempt was made to compare land use characteristics within them over a period of time to obtain further knowledge on the pattern of land use change. In order to accomplish this, a comparison was made of information contained within two previous studies on land use in industrial areas.

In 1969 as part of the broader Vancouver Urban Renewal Study, a Technical Report concerning industrial districts was prepared. While this report focused on the condition of buildings in industrially zoned areas, it also contains valuable information by industrial area on the amount of land in various uses. It is, therefore, possible to use the report to obtain data with respect to the amount of land in industrially zoned areas that is in non-industrial use. The limitation on the data is that "office commercial" and "office/retail" were not specific land use categories used in the report. Rather, the terms "Retail Trade" and "Service" were used. However, the remaining land use categories are various industrial uses, parking, residential, vacant and other. The author of the report has confirmed
that any office or office/retail buildings would be included with Retail or Service. With respect to non-industrial uses in industrial areas the report notes -

A small but definite increase in retail and other non-industrial activities within the industrial districts was noted. Presumably, the lower land costs associated with industrial districts over commercial districts would account for this trend. A continuance of this trend is expected.\(^4\)

The data from the 1969 report relevant to this study is presented in Table IV.

In July 1977 the City of Vancouver Planning Department completed a report entitled *Industry in Vancouver*. While this was a "Preliminary Report for Discussion" and was not, therefore, intended as a definitive policy recommendation document, it does contain some updated information on land uses in industrially zoned areas as of June 1976. The commercial categories used in this report are more disaggregated than the 1969 study - they include: "office services" and "retail/personal service and office service (mixed)". The report, therefore, provides very useful information on office and office/retail uses in industrial areas. The limitations of this data relate to the incompatibility of boundaries for industrially zoned districts between this study and the 1969 study. The incompatibility of boundaries is due to the rezoning of industrial land that has taken place in the intervening seven years. Rezoning has affected some industrial areas more than others so that for some areas comparisons between 1969 and 1976 land use characteristics can reliably be made while in other cases (where more boundary problems occur) the data can only be used to indicate trends. The 1976 land use information is presented in Table VI. A comparison of this data with the 1969 report accompanies this Table.
Since rezoning of industrial land to non-industrial use has also had a major impact on the supply of industrial land in the city, information from the 1976 report concerning the amount of land zoned for industrial use has been updated to June 1, 1978. This information is then compared with the 1969 report in order to indicate both graphically and in tabular form, trends in the supply of land zoned for industry.
Footnotes for Chapter III

1 The term "development" is not defined in the Zoning and Development By-Law, but is defined in the provincial enabling legislation, the Vancouver Charter, as follows - "Development" means a change in the use of any land or building including the carrying out of any construction, engineering or other operations in, on, over or under land or land covered by water.


3 Data collection was partially simplified because a list of all development permit applications in industrial areas covering approximately 4 of the 7½ years had been previously prepared. By reviewing this list it was possible to identify the applications of concern to this study during that 4 year period.

4 City of Vancouver Planning Department, Vancouver Urban Renewal Study, p. 13.
CHAPTER IV

ANALYSIS OF RESULTS

Development Permits January 1, 1971 - June 1, 1978

In the period from January 1, 1971 to June 1, 1978 a total of 61 development permit applications were filed for new office and office/retail buildings or conversion of existing buildings to office use in industrially zoned areas. By including both applications approved and applications refused, it is possible to gain a better understanding of the industrial areas that are apparently attractive locations for office and office/retail developments. A list of the subject properties by municipal address and industrial area is presented in Appendix B. Table I is a summary of this list by industrial area:

TABLE I
DEVELOPMENT PERMIT APPLICATIONS FOR OFFICE AND OFFICE/RETAIL DEVELOPMENTS IN INDUSTRIALLY ZONED AREAS
January 1, 1971 - June 1, 1978

<table>
<thead>
<tr>
<th>Industrial Area</th>
<th>Approved</th>
<th>Refused</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granville &amp; Burrard</td>
<td>13</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td>Cambie &amp; 2nd</td>
<td>3</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Arbutus &amp; 12th</td>
<td>6</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Marine Drive</td>
<td>6</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Powell Street</td>
<td>3</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Fairview Slopes</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>34</td>
<td>27</td>
<td>61</td>
</tr>
</tbody>
</table>
Map I illustrates the location of the city's industrial areas. Map II shows the approximate location of the development permit applications.

The most significant observation from this data is the concentration of applications in three of the inner-city industrial areas (Granville and Burrard, Cambie and 2nd Avenue, and Powell Street) and in the Arbutus and 12th Avenue industrial area. During the study period these areas accounted for only 17% of the supply of industrially zoned land in the city but received 77% of the development permit applications for office and office/retail developments in industrially zoned areas. The apparent significance of the Marine Drive area is moderated by the fact that it is the largest industrially zoned area in the city whereas Granville and Burrard, Cambie and 2nd Avenue and Arbutus and 12th Avenue are among the smallest.

Several parcels of land were subject to multiple applications during the study period, or appeal of a refusal to the Board of Variance resulting in approval. If the data is adjusted to eliminate this apparent double-counting the results do not change the concentration significantly. Table IA shows the number of different parcels subject to at least one development permit application during the study period.
Map 1. Location of Vancouver’s Industrial Areas 1971
Map 2. Location of Industrial Areas and Approximate Location of Development Permit Applications
TABLE IA

DEVELOPMENT PERMIT APPLICATIONS FOR OFFICE AND OFFICE/RETAIL DEVELOPMENTS IN INDUSTRIALLY ZONED AREAS
January 1, 1971 - June 1, 1978

<table>
<thead>
<tr>
<th>Industrial Area</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granville &amp; Burrard</td>
<td>19</td>
</tr>
<tr>
<td>Cambie &amp; 2nd</td>
<td>11</td>
</tr>
<tr>
<td>Arbutus &amp; 12th</td>
<td>5</td>
</tr>
<tr>
<td>Marine Dr.</td>
<td>7</td>
</tr>
<tr>
<td>Fairview Slopes</td>
<td>3</td>
</tr>
<tr>
<td>Powell St.</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>52</strong></td>
</tr>
</tbody>
</table>

From the date it was also possible to ascertain which of the applications was for a new office building (usually 2 or 3 stories) and which was for conversion of an existing building to office or office/retail use. This data was compiled as further evidence of land use succession. Table II summarizes the results by industrial area.
### TABLE II

**SUMMARY OF DEVELOPMENT PERMIT APPLICATIONS BY NEW CONSTRUCTION AND CONVERSION OF EXISTING BUILDING**

<table>
<thead>
<tr>
<th>Industrial Area</th>
<th>New Building</th>
<th>Conversion of Existing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burrard &amp; Granville</td>
<td>14</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Cambie &amp; 2nd</td>
<td>5</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>Arbutus &amp; 12th</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Marine Dr.</td>
<td>5</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Powell St.</td>
<td>1</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Fairview</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>31</strong></td>
<td><strong>61</strong></td>
</tr>
</tbody>
</table>

Apart from the concentration of new construction in the Burrard and Granville area the data shows a balance between new construction and conversion of existing buildings (usually warehouses) to office and office/retail use.

Also from the development permit records the reasons for refusal were documented as they appeared on the permit application. The reasons are not significantly different as between industrial areas and are, therefore, not documented in tabular form. They either state that the application is "unsuitable in this M-1 area" or "unsuitable at this location in M-1". There is also reference on some applications to the fact that the proposed development is more suitable in a commercially zoned area or that there are sufficient commercially zoned sites in the vicinity. Some
warehouse/office applications were also refused because the proposed development had an excess of 33% of floor space for office use contrary to the provisions of the By-law. In these cases there was evidence that the office space was to be leased separately rather than used for an ancillary space for the warehouse. Apart from the requirements of the by-law there appears to be no trend in the applications refused and approved that can be related to the proposed developments themselves. However, when the approvals and refusals are noted with respect to location (see Table I) it is observed that 100% of the applications in the Arbutus and 12th area were approved, 65% of the applications in the Granville and Burrard area were approved while 21% of the applications in the Cambie and 2nd area were approved. These differing approval percentages provide some evidence of the existence of a guideline or undocumented policy favouring office and office/retail developments in some industrial areas more than others.

Information concerning the occupancy of those buildings receiving development permit approval was, in some cases, available on the development permit file. Further information was collected during site visits. This information is potentially valuable in helping to determine whether office and office/retail buildings were being constructed in industrial areas because of linkages between the occupants and the nearby industrial enterprises. The information does not substantiate the conclusion that linkages with industry are the reason for such buildings. This is particularly true in the inner city areas where linkages among business offices and with the nearby central business district would appear to be a stronger influence.
In the Marine Drive area one application was for an office building to be occupied by a nearby construction firm. Another was for a municipal government department with a works yard nearby. However, in the Arbutus and 12th area three of the applications were for office buildings occupied by various branches of the regional government (G.V.R.D.). A fourth office building is occupied by the Vancouver offices of the Provincial Department of Human Resources.

Office buildings in the Granville and Burrard area are occupied by firms whose linkages are much broader than the nearby industrial area. Examples include architects, life insurance companies, management consulting firms, and business systems consultants.

In the Powell Street area two of the applications included retail space while a third was to be occupied by a department of the provincial government. The Cambie and 2nd Avenue area applications included a commercial office building and a large service centre for the Canadian Imperial Bank of Commerce.

From the development permit data it is possible to conclude that the inner city industrial areas are of more interest to office/retail developments than are other industrial locations. Offices located in these areas have a broader network of linkages than the immediate industrial area in which they are located. A balance of new building construction and conversion of industrial buildings to office use was noted in all inner city industrial areas with the exception of the Granville and Burrard area where new office buildings were predominant. The evidence also suggests that the location of the proposed development was more important in determining its approval or refusal than the details of the development.
Office and Office/Retail Developments in Industrially Zoned Areas 1978

Information obtained from the 1978 property tax records of the City of Vancouver substantiates the concentration of office and office/retail buildings in the four industrial areas identified in the development permit data. Since the information was made available in confidence it is not possible to identify the properties by municipal address. Therefore, Table III presents a statistical summary of the data by industrial area.

**TABLE III**

**INCIDENCE OF OFFICE AND OFFICE/RETAIL BUILDINGS IN INDUSTRIALLY ZONED AREAS 1978**

<table>
<thead>
<tr>
<th>Industrial Area</th>
<th>Office Building Primary Use</th>
<th>Store(s) &amp; Offices</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granville &amp; Burrard</td>
<td>13</td>
<td>6</td>
<td>19</td>
</tr>
<tr>
<td>Cambie &amp; 2nd Ave.</td>
<td>16</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>Powell St.</td>
<td>15</td>
<td>15&lt;sup&gt;x&lt;/sup&gt;</td>
<td>30</td>
</tr>
<tr>
<td>False Creek - East End</td>
<td>1</td>
<td>5&lt;sup&gt;xx&lt;/sup&gt;</td>
<td>6</td>
</tr>
<tr>
<td>Arbutus &amp; 12th Ave.</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Clark Dr.</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Marine Dr.</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>51</strong></td>
<td><strong>32</strong></td>
<td><strong>83</strong></td>
</tr>
</tbody>
</table>

<sup>x</sup> 13 of the 15 are along Hastings and Powell Streets.

<sup>xx</sup> All 5 are along Main Street.
As noted in the Table, Hastings, Powell and Main Streets account for many of the buildings containing retail space and having obvious locational advantages for a combined retail/office building.

In the interest of clarity it should be noted that the difference between the information contained in Table III and the development permit data presented in the previous section of this Chapter is attributable to the following:

1. The buildings listed on the property tax file may have received development approval prior to January 1, 1971 the starting date for collection of development permit data.
2. Rezoning of industrial land to non-industrial between the time of development approval and 1978.
3. Illegal conversions of industrial buildings to office or office/retail use.
4. Discrepancies between assessment records and development permit records. (i.e. not all approved developments are constructed.)

Trends in Land Use in Industrial Areas 1969 - 1976

To this point the study has documented only office and office/retail developments that have been approved and/or exist in the City's industrially zoned areas. The total number of non-industrial uses that exist in the City's industrial areas is, in fact, much larger than the data presented to date might suggest. In order to appreciate the magnitude of the issue it is necessary to refer to more comprehensive land use information. An attempt has been made to analyze and present this information in time series by using data available in two previously published reports. The focus of the presentation will be on the four inner-city industrial areas identified from development permit records and property tax files as being of interest to non-industrial uses.
The 1969 *Vancouver Urban Renewal Study* calculated the net supply (excluding streets, lanes and railways) of industrially zoned land in the City to be 2038.81 acres (net) excluding the Burrard Inlet waterfront.¹

The major land uses in the industrial districts were: manufacturing (765.12 net acres or 32.5%), wholesale and retail firms (421.39 net acres or 20.7%), storage and transport firms (313.55 net acres 15.4%), vacant (210.87 net acres or 10.3%), residential (126.56 net acres or 6.2%), parking, signs, garages (55.98 net acres, 2.7%), other uses (144.34 net acres or 7.1%).² By adjusting the categories it is found that 135.59 acres or 6% of the land was being used by the following non-industrial activities: retail trade, finance real estate and insurance, and business or professional services.

In 1969 the net land area of the four inner city industrial areas of interest to this study was 356.42 acres. The principal land uses in the four areas were manufacturing (including metal fabrication), wholesaling, commercial and residential. 61.54 acres or 17% was in retail and office/commercial use. This information is summarized in Table IV.
TABLE IV

NET LAND AREA INNER CITY
INDUSTRIAL AREAS, 1969

<table>
<thead>
<tr>
<th>Industrial Area</th>
<th>Retail and Office Commercial</th>
<th>Total Net Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granville &amp; Burrard</td>
<td>11.83</td>
<td>49.30</td>
</tr>
<tr>
<td>Cambie &amp; 2nd Avenue</td>
<td>24.03</td>
<td>143.90</td>
</tr>
<tr>
<td>Arbutus &amp; 12th Avenue</td>
<td>3.93</td>
<td>27.47</td>
</tr>
<tr>
<td>Powell Street</td>
<td>21.75</td>
<td>135.75</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>61.54</strong></td>
<td><strong>356.42 Acres</strong></td>
</tr>
</tbody>
</table>

In the period between 1969 and 1976 when a report on land use in industrial areas was again compiled, a significant amount of rezoning of inner city industrial land had taken place. As a result, comparison between the two years is difficult because the boundaries of the industrial areas have changed. Comparison to reveal trends is also complicated by the fact that some rezoning from industrial to non-industrial use was specifically undertaken to rationalize the pattern of land uses that had emerged as a result of previous approvals.

In 1976 the supply of industrially zoned land (excluding streets, lanes and railways) was determined to be 1638.51 acres, (net). This represents a decrease of 400.3 acres or 19.6% of the supply. The largest land uses are the manufacturing, processing and construction industries. The second largest land use is the wholesaling and warehousing industry. The third largest is unutilized land located primarily in the Marine Drive area. The fourth largest is
transportation services. Commercial land uses were the fifth largest users of industrial land in 1976. 130.65 acres or 7.9% of industrially zoned land was in commercial use.

In the inner city industrially zoned areas of interest to this study the amount of land zoned for industrial use had diminished significantly but the percentage of retail and office commercial development had remained the same despite the fact that some rezoning of industrial land had the effect of removing commercial land uses from industrial areas.

TABLE V
NET LAND AREA INNER CITY INDUSTRIAL AREAS, 1976
(Boundaries not co-terminous with 1969 study)

<table>
<thead>
<tr>
<th>Industrial Area</th>
<th>Retail and Office Commercial (Acres)</th>
<th>Total (Acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granville &amp; Burrard</td>
<td>10.32</td>
<td>60.83</td>
</tr>
<tr>
<td>Cambie &amp; 2nd Avenue</td>
<td>19.24</td>
<td>118.82</td>
</tr>
<tr>
<td>Arbutus &amp; 12th Avenue</td>
<td>5.86</td>
<td>23.4</td>
</tr>
<tr>
<td>Powell Street</td>
<td>15.84</td>
<td>97.45</td>
</tr>
<tr>
<td>Totals</td>
<td>51.26,</td>
<td>300.50</td>
</tr>
</tbody>
</table>

As in 1969 the major land use in each of the four areas is manufacturing or wholesaling followed by commercial. The amount of land in residential use has been reduced substantially by rezoning and conversion of residential properties in industrial areas to higher uses.
From the land use information presented it is evident that manufacturing and wholesaling were the dominant land uses in the inner city industrial areas of interest to this study in both 1969 and 1976. However, it is also evident that the amount of land in commercial use in these inner city industrial areas is significantly above the average for all of the city's industrial areas.

Rezoning of Industrial Land 1969 - 1978

In order to give the data in this Chapter more perspective and provide the background for a discussion in Chapter 5 of the implications of the study's findings, a summary of land rezoned from or to industrial use between 1969 and 1978 has been compiled. Again, because of data constraints, the Burrard Inlet waterfront land (approximately 795 gross acres) has been excluded from the calculations although its location is shown on the zoning Map 3 which accompanies this section.

In 1969 a net total of 2038.81 acres was zoned for industrial land use (M-1 and M-2). The location of these areas is shown on Map 3. This net total excludes streets and lanes and rail yards.

In June 1978 the amount of industrially-zoned land using the same exclusions as in 1969 was 1595 acres. This represents a reduction of 443.8 acres or 21.7% in the amount of industrially zoned land from 1969 to 1978. The location of the land that was zoned for industrial use in 1978 is also illustrated on Map 3. By comparing the 1969 and 1978 zoning boundaries the location of the land that has been rezoned from industrial to non-industrial use has been highlighted. It is apparent that the land rezoned from industrial to non-industrial uses is concentrated in the inner city.
Map 3. 1969 and 1978 Zoning Boundaries for Industrial Areas

- 1969 industrial zone boundary
- 1969 industrial area since reclassified
- 1978 industrial zone
The spatial aspects of urban growth have been described by urban land economists and geographers as resulting from a process of land use succession (Ratcliff 1949, Fisher and Fisher 1954, Bourne 1967). If, as suggested by Ratcliff, the urban land market is seen as operating according to a process of competitive bidding among land users, land use succession occurs because a new land use is able to outbid an existing use for the opportunity to develop (or redevelop) a parcel of land. The urban land use pattern at any point in time is, therefore, the outcome of a bidding process acting within the overall framework established by legislation. The composition of this legislation influences the bidding process and, therefore, the land use pattern. For example a zoning map provides a gross allocation of land for each of the major land uses (residential, commercial and industrial) and therefore establishes the supply in each category. Likewise, because each zoning category contains a list of permitted uses, the legislation influences the demand for industrial land and creates a number of sub-markets.

In the competition for urban land the bid entered by each land use is determined by the anticipated revenue realized by the use of a parcel of land, less costs. Office commercial developments are able to produce a higher revenue than any other land use and are therefore able to outbid other land uses unless prevented by legislation from doing so. (Lean and Goodall 1966, Shenkel 1964). It is logical to expect that the succession of industrial land to commercial use would be most prevalent in areas that are most attractive for commercial development. One such area in Vancouver and most other Canadian cities is the inner city - the zone of transition surrounding the commercially
oriented Central Business District. This area is characterized by older industrial buildings, frequently loft buildings, mixed with a variety of other uses including residential - a carryover from earlier zoning by-laws which allowed residential uses in industrial areas (Hardwick 1974). The area is considered underdeveloped and frequently serves as a supply of land for non-industrial uses.

The data presented in this Chapter confirms that a process of land use succession is well established in some of Vancouver's inner city industrial areas. This process is permitted and to some extent directed to certain industrial areas by the Zoning and Development By-Law and the pattern of approval of development permits arising from the By-Law. Furthermore, the supply of inner city industrial land has diminished significantly between 1969 and 1976 as a result of the approval of non-industrial uses in industrial areas and the rezoning of inner city industrial land.
Chapter IV Footnotes

1 The Burrard Inlet Waterfront Industrial Area was excluded because a net land area figure was not given in the study.

2 From City of Vancouver Planning Department, Vancouver Urban Renewal Study. Technical Report No. 4. Industrial Districts (Vancouver August 1969).

3 Len Tennant, Industry in Vancouver. Pg. 10. Burrard Inlet is again excluded.

4 For example, 41,418 square feet or 28% of the office space constructed in the industrial areas bordering the central Broadway area was transferred to commercial zoning in 1975. Derek W. Hayes, Employment Growth in Vancouver. (City of Vancouver Planning Department, November 1975).

CHAPTER V

POLICY AND PLANNING IMPLICATIONS

In Chapter IV evidence was produced to show that some of Vancouver's inner city industrial areas have served as a supply of land for non-industrial uses during the period from 1969 to 1978. Certain industrial zoning practices have been identified as contributing to the process of land use succession in inner city areas. While it is true that as a result of public policy and competitive bidding for land, an increased supply of both residential and commercial space is being made available in the city, there are also implications as noted in Chapter I, arising from a significant decrease in the amount of inner city land that is still available for industrial use. This Chapter begins by documenting the decrease in the amount of inner city land that is zoned for and available for industrial use. Such documentation is a necessary prerequisite to any discussion of the implications of the study's findings for present and future public policy. The arguments for and implications of a continuation of the present regulatory mechanisms will then be presented and evaluated. The counter argument in favor of retaining a supply of land in the inner city available for use by certain types of industries will then be presented by making reference to previous research in other metropolitan areas and in the Vancouver area.

Finally, the implications of the thesis for planning practice will be discussed. Reference will be made in particular to the difference between the system of development control as developed in Britain and how it has been adapted to Vancouver.
The discussion in this chapter is based on the evidence, presented in Chapter IV, that, at present, it is Vancouver's inner city industrial areas that are most affected by current planning processes and legislation and the operation of the urban land market. This Chapter is, therefore, a more detailed discussion of certain aspects of the larger issue of long term economic and social impacts arising from the conversion of industrial land to commercial use.

The remaining supply of industrially zoned land in the inner city (excluding the Burrard Inlet) is documented in Table VI.

**TABLE VI**

**SUPPLY OF LAND IN INNER CITY. INDUSTRIAL AREAS.**

(Excluding Streets and Lanes)

<table>
<thead>
<tr>
<th>Industrial Area</th>
<th>Rail Yards &amp; Right-of-Way (Acres)</th>
<th>Net (Acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granville &amp; Burrard</td>
<td>2.19</td>
<td>60.83</td>
</tr>
<tr>
<td>Cambie &amp; 2nd Avenue</td>
<td></td>
<td>118.82</td>
</tr>
<tr>
<td>Arbutus &amp; 12th Avenue</td>
<td>1.24</td>
<td>23.4</td>
</tr>
<tr>
<td>Powell Street</td>
<td>.82</td>
<td>97.45</td>
</tr>
<tr>
<td>Clark Drive</td>
<td>8.93</td>
<td>81.07</td>
</tr>
<tr>
<td>False Creek Eastend</td>
<td>55.30</td>
<td>113.34</td>
</tr>
<tr>
<td>False Creek Flats</td>
<td>163.76</td>
<td>190.92</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>232.24</strong></td>
<td><strong>685.83</strong></td>
</tr>
</tbody>
</table>
The Arbutus and 12th Avenue area and the east end of False Creek have been suggested as areas requiring further study. If these areas were rezoned, there would be a reduction of 21% in inner city industrially zoned land to 549.09 Acres.

It has been suggested that the Granville and Burrard industrial area requires further study because of its attractiveness to non-industrial uses. If this area were rezoned, the amount of land zoned for industrial use would be reduced by 60.83 Acres to 488.16 Acres. Of this remaining land, 47.09 Acres is taken up with commercial uses. If it is assumed that this land is no longer available for industrial use, the amount of inner city industrially zoned land actually available for industrial use is 441.07 Acres.

By comparison, in 1969 the total amount of industrially zoned land in the inner city was 1054.1 Acres. There has, therefore, been an actual and proposed reduction of 613.03 Acres in the amount of inner city industrially zoned land.

The data from development permit records presented in Chapter IV shows that there is continued pressure to convert inner city industrial land to non-industrial uses. There are several arguments in favour of allowing such a process of land use succession to continue. The more significant are:

1. Growth in the secondary sector of the regional economy is projected to take place at a much slower rate than in the tertiary sector. Without major public intervention much of the tertiary growth will result in the demand for more office space in or near the C.B.D. In order to provide an adequate supply of land for these respective activities in the future, the succession of industrial land to office/commercial use in the inner city should be approved if not encouraged.
2. Research has shown that one of the most significant trends in industrial land use in the Vancouver Metropolitan Area is the suburbanization of industry. Since industry is relocating to the suburbs and there are demands for inner city land currently in industrial use, a policy favouring land use succession in the inner city is justified.

3. Conversion of industrial land to office/commercial use strengthens the city's property tax base because of the higher assessment rating for office buildings compared to industrial buildings.

4. Conversion of industrial land to office/commercial use provides employment opportunities since employment densities in office buildings are usually higher than in industrial buildings.

As noted in Chapter I each of these arguments could profitably serve as the basis for additional research. It is therefore beyond the scope of this study to engage in a detailed examination of each argument. However, it is possible to point out the limitations of each as a basis for public land use policy.

In the differing growth rate argument, the growth rate is measured by shifts in employment. However, the argument fails to account for the fact that tertiary sector activities, because they are office and retail oriented, have higher employment densities than those in the secondary sector and therefore require less land. Both the secondary and tertiary sectors are expected to increase in actual employment in the period to 1986. A continuation of a policy of converting inner city industrial land to office/commercial and residential uses allocates future industrial growth to suburban areas irrespective of the actual location requirements of firms.
The argument concerning the suburbanization of industry fails to account for the differing locational criteria among specific industries and also assumes that all industrial firms, irrespective of size are decentralizing. Studies of intrametropolitan industrial location have shown that locational criteria varies with the size of the industrial firm and among specific industries. (Vernon 1960, Pred 1964, Goldberg 1969, Steed 1973). Clearly it is necessary to be more specific with respect to industrial location trends if sound public policy is to be formulated.

The argument with respect to the beneficial impact on the property tax base is correct at the individual parcel level and in the short run. If a 2 or 3 storey office building replaces a warehouse or small manufacturing enterprise, the return in property taxes is usually higher. However, the evidence presented in Chapter IV shows that at present not all industrially zoned areas are attractive locations to office/commercial developers. The longer-term impact on the property tax base is, therefore marginal. Refusal of commercial development applications in industrial areas would not necessarily result in a loss of tax revenue since many of the developers would seek a location in commercially zoned areas. Because of filtering, the vitality (and the property values) of existing commercial areas could be sustained or enhanced. The long run impact on the property tax base is even more difficult to estimate. If each of the inner city industrial areas that have to date experienced significant commercial development continued to show this trend, pressure would mount to rezone the areas in order to rationalize the new land use pattern. If the rezoning allowed commercial development to continue at
current permissible densities (5 f.s.r.) the amount of tax revenue collected from these areas would no doubt rise significantly. However, such increases must be considered against increased public costs arising from such a high density form of development. Creating additional land for commercial development could adversely affect property values and therefore property tax revenue from existing commercial districts. Finally there is the impact on the urban and regional economy of the continuing decline in inner city land available for industrial use. Later in this chapter the positive aspects of inner city industrial areas will be discussed.

The employment opportunities argument is also generally sound if it is limited to the total number of jobs. However, it is also clear that the range of employment opportunities would tend to narrow since industrial jobs in the inner city would be replaced by jobs in the commercial sector as noted in Chapter I. This trend is counter to other city policies which have emphasized the objective of retaining a diversity of employment opportunities in the city. In October 1977 achievement of this objective was considered to require "an emphasis on blue collar employment and on high technology industry". The continued concentration of office commercial developments in the central city is also contrary to regional government policies concerning the decentralization of employment opportunities.

Finally, the argument for continuation of the existing regulatory mechanisms, if taken to its ultimate conclusion, would result in no zoning at all. This would be the inevitable result of a planning process which simply adjusted the zoning map to accommodate and reflect the urban land use...
pattern as determined by the unfettered action of the urban land market. Land economists and planners both agree that, at the minimum, a zoning plan should minimize negative externalities or spillover effects in the market place by the separation of incompatible uses. In order to carry out this mandate it is necessary to intervene in and regulate the urban land market. Zoning, therefore, by definition involves a change in the pattern of land uses. The use of the zoning by-law to regulate land uses in the interests of accomplishing other public policies is now an accepted practice in public administration. The possible inefficiency of the land use pattern imposed by a zoning plan must be weighed against the objectives which the plan is intended to accomplish. For example, a zoning plan which has the objective of decentralizing employment opportunities by limiting employment densities in certain areas may very well be contrary to the pressures for concentration occurring in the market place. However, if by decentralizing employment there is a beneficial effect on the volume of work related commuting, surely this is a measure of efficiency.

In conclusion, the arguments in favour of a policy of allowing land use succession in the inner city industrial areas to continue are significant. However, they do not acknowledge the positive role of inner city industrial areas as an important location for certain industries and therefore ignore the fact that there are social and economic trade offs. Furthermore, the arguments overstate the beneficial impact on the city's tax base and on employment opportunities. Finally, continued succession would have consequences contrary to both regional planning policies and other policies of the City of Vancouver.
Inner City Industrial Areas - A Positive View

Most of the research that has been conducted on intrametropolitan industrial location in the past 25 years has documented the trend to suburbanization of industry. As a result, it has become part of the conventional wisdom of urban planning to think of industry as either being located in suburban industrial parks or as occupying inner city locations that could be converted to a higher use but unable to relocate because of inertia or cost. The limitations of this assumption as a basis for the formation of urban land use policy in a central city such as Vancouver have already been referred to. In fact, there is sufficient evidence from both outside and within the Greater Vancouver area to warrant a reconsideration of this assumption. In the interests of sound public policy formation it is necessary to identify more specifically the characteristics of those industries which are relocating outside the central city and, conversely, those industries which continue to find inner city locations an important if not vital factor in their economic well being.

In 1959 and 1960 two books were published arising from the review of the Regional Plan for the New York metropolitan Area. The study which had been undertaken for the New York area had documented the suburbanization of certain industries but is also identified a tendency for some industries and the smaller plants of others to remain clustered at locations in close proximity to the Central Business District. These inner city industries were composed of three broad groups.

1. Industries such as the garment industry which depend upon frequent face-to-face communication and an accessible location.
2. Industries such as the printing and publishing industry which depended upon the nearby C.B.D. as their market. Frequent face-to-face communication with clients was important because of the variability of their product. Hoover and Vernon named the industries in the first and second group the "communication oriented industries".

3. New and/or small firms which sought inner city locations because of the external economies available at such locations. It was noted that larger firms in the same industry were located in suburban surroundings and were benefiting from internal economies associated with their size and volume of business. The smaller industrial firms are exposed to greater uncertainties in both sales and production.

Small plants have done their best to meet this inherent competitive handicap by locating in areas where sudden needs could be easily met from sources outside the plant. To avoid stock piling their materials in disproportionately large amounts, they have clung close to the centres of the urban cluster, where they can get materials on short notice; to meet the problems of labor force variation or machine breakdowns, they have chosen locations where they can recruit workers for brief periods or on short notice. They have chosen loft space, short run in commitment and flexible in size, in preference to the separate factory building away from the urban centre. In sum, the denser areas of the New York Metropolitan Region are acting as a common pool of space, materials, and labor, meeting the inherent uncertainties of the small plants which occupy those areas.

The work of Hoover and Vernon in New York is the beginning of the incubator theory. The basic principle of the theory is that small industrial enterprise will initially seek locations where they can incubate or establish their business by taking advantage of reasonably priced space and
external economies. Such locations are usually found in the inner city. Once the firm becomes established it will outgrow its existing space and seek room for expansion elsewhere. Thus the migration of firms from the inner city to more spacious suburban locations is evidence of the positive role played by the inner city in the urban or metropolitan economy.

Since 1962 there has been little research conducted with the intent of verifying the incubator hypothesis per se. However, the dynamics of intra metropolitan industrial location have received increasing attention. Pred (1964) for example identified seven types of metropolitan manufacturing having distinctly different locational patterns. Goldberg (1969) was able to verify "an inverse relationship between the size of a plant and the density of the sub area in which it locates". His attempts to test the hypothesis that "growing plants tend on the average to move to less dense locations within the metropolitan area" was handicapped by data problems.13

Leone and Struyk (1976) divided the incubator theory into two hypotheses. Their "simple hypothesis" was that highly centralized locations would attract a disproportionate number of new firms. Their "complex hypothesis" suggested that new firms which are formed in high density areas move outward in the early years to expand their activities.

Based upon a review of the literature (which includes studies of metropolitan areas other than New York) they conclude that "the births of new manufacturing enterprises are not disproportionately concentrated in the core of metropolitan areas, as the simple incubator hypothesis would suggest".14 However, the literature they reviewed did show
that central areas attracted new firms and, for some metropolitan areas, a disproportionate number. With respect to the complex hypothesis they conclude -

Almost certainly a large number of plants incubating in the central city eventually end up in the less dense Inner, and Outer Ring counties, but our evidence shows that it often takes more than one move to get there.¹⁵

They identify the public policy implications of their findings as follows -

If today's plants incubating in decaying areas of central cities are a source of growth to less dense, more recently developed areas in the future, then there are implications for public policy in the area of urban renewal, local economic development, and even fiscal policy.¹⁶

Research conducted in the New York Metropolitan area and other metropolitan areas in the U.S. cannot be used as the major justification for public policy decisions in the City of Vancouver. However, the research concerning intra-metropolitan industrial location and inner city industry that has been conducted in the Vancouver Metropolitan area does provide some support for the conclusion that inner city areas in Vancouver also provide important locational advantages for certain types of industries and smaller firms.

In 1973 Guy Steed of Simon Fraser University published the results of a study concerning the distribution and locational dynamics of manufacturing in the Greater Vancouver area.¹⁷ The purpose of the study was to "outline the spatial distribution of manufacturing in Greater Vancouver, identify which processes generated relative changes in the plant distribution pattern, contrast the relative spatial
impact of these processes in the mid-fifties with the mid-sixties, then view these locational changes in the light of features of the industrial land market and suggest some points of public policy interest'.

The location of manufacturing plants by size and time zone in 1965 indicated a concentration in the 0 - 10 minute time zone (inner city) as shown on Table VII. In both 1955 and 1965 the industries whose plants were most heavily concentrated in the inner city were Textiles, Clothing and Knitting and Printing and Publishing. Cheap space plus access to a labour supply attracted the garment firms while the growing market in the C.B.D. provided a market for printing and linkages for publishing.

TABLE VII

LOCATION OF PLANTS BY SIZE AND TIME ZONE
GREATER VANCOUVER 1965. (From Steed 1973)

<table>
<thead>
<tr>
<th>EMPLOYEES</th>
<th>0 - 10</th>
<th>10 - 15</th>
<th>15 - 20</th>
<th>20 - 25</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 9</td>
<td>312</td>
<td>101</td>
<td>91</td>
<td>90</td>
</tr>
<tr>
<td>10 - 25</td>
<td>153</td>
<td>38</td>
<td>15</td>
<td>40</td>
</tr>
<tr>
<td>26 - 100</td>
<td>104</td>
<td>27</td>
<td>21</td>
<td>49</td>
</tr>
<tr>
<td>101 - 500</td>
<td>26</td>
<td>12</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td>500</td>
<td>1</td>
<td>--</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Steed suggested that the changing locational dynamics were due to three factors: the entry of new plants, the mortality of existing plants and the migration of plants within the Region. Using data published annually by the then
Dominion Bureau of Statistics he was able to determine the entry, exit and migration of plants in the Region in the periods 1954 - 57 and 1964 - 67.

In a sample of 233 plants new to Greater Vancouver in 1964-67, it was found that 175 were entirely new born firms, 25 represented changes of name following purchase from the previous owner, 4 involved name changes through merger of Canadian owned firms, 27 were new branches of subsidiaries of American or Canadian parent firms outside British Columbia, 1 was a new branch of a British Columbia firm, and 1 involved a shift in S.I.C. classification.

He also found that the clothing, printing and publishing industries comprising many small plants, had many entries, mortalities and migrations. Most of this activity, including migrations, occurred within the inner industrial core lending support to the hypothesis that a location within this area was essential to their business.

The choice of an inner city location for new plants diminished from 58% to 46% of the total over the give time periods. Furthermore, the inner city generated most of the plant migrations - 61% and 50% respectively. A smaller survey of plants relocating in the 1964-67 period confirmed that the major reasons for relocation was lack of space for expansion. Notwithstanding the apparent decline in importance of the inner industrial core by some indicators, the study discovered that the ratio of plant births to mortalities in all industrial areas including the inner city was 5:4. Furthermore, because of the birth mortality ratio, the total number of plants in the inner industrial core "barely changed". Steed concluded that for the two time periods in his study
...the concept of manufacturing plant suburbanization predominantly through plant outmigration from the inner industrial core was not valid. By far the majority of plants appearing in the suburban periphery were new plants, not migrants. Most migration was in short distance moves within the inner core, and the longer moves were mainly to the south and east but still largely within the City of Vancouver.

He also found support for the incubator hypothesis —

... Even in the mid-sixties, however, nearly one half of the new plants were located within the inner industrial core, despite its higher land costs. This provides an indication of the strength of the core's incubation function and the continuing desire to obtain access to external economies.

Finally, Steed commented on the public policy implications of his study —

...given the particularly non-homogeneous nature of industrial space in this metropolis, plus the Vancouver City Council's decision to transform the False Creek area out of industrial use, it may be important to maintain, even reinforce, the vitality of the remaining inner industrial core, which provides a significant incubator as well as industrial service function.

Ten years has elapsed since the second of Steed's data periods (1967). In the intervening time the supply of land available for new industrial development within the City of Vancouver outside of the inner area has dwindled. The suburbanization pattern has therefore concentrated on municipalities such as Richmond and Burnaby.

Research conducted by the Greater Vancouver Regional District and the City of Vancouver Planning Department provides further insight into the role of the inner city industrial areas.
The Vancouver Urban Renewal Study (1969) documented the nature of the inner city industrial districts as follows -

The tendency for established firms to relocate outside central Vancouver is counter-balanced by a strong desire for central location exhibited by new firms, particularly small wholesaling firms. These shifts point to a changing role for central Vancouver industrial districts, from areas for large manufacturing and transportation firms to areas for a variety of smaller industrial firms, mainly wholesalers and distributorships with servicing facilities.23

The G.V.R.D.'s report Space for Industry (1971) reached a similar conclusion -

....the industrial role of the inner city is changing to that of a focus for smaller, more specialized firms which can benefit from central location and afford its higher ground rents. Larger industries, by way of contrast, are decentralizing.24

In 1971 the Planning Department conducted a mail survey of many industrial firms located in inner city areas.25 Responses were received from 1,300 firms. The purpose of the study was to investigate "the stability of older firms, entry of newer firms and the consideration of existing firms to relocate".26 The survey revealed that over 40% of the respondents had been located at their present sites five years or less and another 25% from 6 to 10 years. Only 14% of the sampled firms were considering relocation in the near future. The study concluded that "inner city industry was still actively expanding and that many firms existing there had no desire to relocate".27
In July 1976 a follow up survey in the Yaletown area on the southeastern corner of the Central Business District was undertaken. The Yaletown area is an older industrial area not unlike the Powell Street area in its supply of older loft buildings. At the time of the survey it had come within the downtown zoning regulations and was therefore subject to conversion to non-industrial uses. The 1976 survey, compared with the 1971 results showed the noticeable presence of professional people and business offices allowed under the rezoning. This group comprised 30% of the respondents in 1976. However 49 of the 102 responses to the survey were from manufacturing, wholesaling or warehousing firms. 86% of the respondents indicated that the Yaletown location was the firm's only location. 52% of teh respondents had either been previously located in Yaletown or elsewhere at a location close to the C.B.D. (eg. Gastown). Asked why they located in Yaletown 21% cited proximity to the C.B.D. A further 18% mentioned reasonable rent. 8.7% referred to similar or related firms nearby. 71% of the respondents planned to remain in their present location while 20% planned to expand at their present location. Those firms planning on remaining if not expanding included 7 of the 8 manufacturers responding, and 28 of the 34 wholesalers responding. Given the limitations on this data arising from the fact that the respondents included some non-industrial firms, the results nevertheless provide further evidence of the need for inner city locations on the part of certain industrial firms.

Part of the attraction of the inner city for smaller and newer industrial firms has been the availability of reasonably priced leasehold space. Table VIII shows the
rental range for industrial property in Vancouver's inner city in 1978 compared with suburban Vancouver and a property in Burnaby and Richmond, two communities that might potentially offer some of the same external economies as inner city locations.

**TABLE VIII**

**RENTAL RANGES FOR INDUSTRIAL PROPERTY IN VANCOUVER-INNER CITY, VANCOUVER-SUBURBAN BURNABY AND RICHMOND.**

<table>
<thead>
<tr>
<th>Industrial Area</th>
<th>Rental Range ($/sq, ft,)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vancouver-inner city</td>
<td>$1.75--3.00</td>
</tr>
<tr>
<td>Vancouver-suburban</td>
<td>$1.75--3.80</td>
</tr>
<tr>
<td>Burnaby</td>
<td>$1.90--3.25</td>
</tr>
<tr>
<td>Richmond</td>
<td>$2.00--3.00</td>
</tr>
</tbody>
</table>

This table is further evidence of the continued attractiveness of Vancouver's inner city industrial areas for new or small scale industrial firms looking for well located, reasonably priced rental space.

A Zoning and Development By-law that allows office commercial uses to compete with industrial uses for inner city locations is not supportive of industry. If the City of Vancouver is committed to retaining industry as a significant economic activity in the city for the reasons mentioned in Chapter I it must be prepared to provide a supply of
reasonably priced industrial land especially in the inner city. Some industrial land which is so located as to be attractive to industry and commercial land uses should either be protected by legislation for exclusive industrial use, rezoned to commercial use or fall within a mixture of industrial and commercial uses that is planned for and regulated. The City of Toronto has recently amended its land use control legislation to incorporate some of these features because many of the concerns regarding inner city industrial land expressed in this study also exist in Toronto.

Implications for Planning Practice

Reference was made in Chapter II to the fact that the City of Vancouver's Zoning and Development By-law, first passed in 1956, incorporated a system of planning approvals through the use of development permits. The necessity to obtain planning approval was contrary to the American Zoning tradition and actually had its origin in Great Britain. The Town and Country Planning Act of 1932 required that planning schemes be prepared for almost every type of land in the country. Such schemes were time consuming to prepare and as a result a system of interim development control was used during the time between the passing of a resolution to prepare a planning scheme, and its actual approval. The system was voluntary and was designed to allow developers to seek planning permission as a protection against constructing a building that might otherwise be contrary to the planning scheme once completed. Thus development control first was used as an interim measure pending completion of a planning scheme.
The Town and Country Planning Act of 1947 required that planning permission be obtained for almost all developments. However, the Act also required that development plans be prepared for every area in the country.

The intent of the development plans was to outline the planning objectives and policies for the area including the manner in which land was to be used. The local planning authority was given considerable discretion in approving development applications outright, granting approval with conditions, or refusing the application. However the Act directed the authority to have regard for the provisions of the development plan. Cullingworth (1973) describes the intended relationship between planning approval and the provisions of the development plan as follows --

But though local planning authorities have considerable latitude in deciding whether to approve applications they have to be clear on the planning objectives for their areas, otherwise they have no adequate basis on which they can judge the merits and shortcomings of particular applications.

Despite the intention in the legislation that the development plans show only broad land use allocations, they had in fact been prepared in considerable detail and were therefore highly focused on land use planning and were difficult to keep up to date. Accordingly the 1968 and 1971 Town and Country Planning Acts replaced the development plans with a new system of structure plans and local plans. Structure plans were a written statement of planning policy for counties and towns. The local plans were a more detailed elaboration of the policies in the structure plan applied to a specific area. The new system of structure and local plans was still intended to serve as important guides for the control of development. This policy framework for planning permission is described by Dobry (1975) as follows --
Individual planning decisions should not be made in a vacuum. If decisions are to be correct, fair, and above all, consistent, they must be made within a clear and consistently applied framework comprising:

(i) approved structure plans and local plans which are kept up to date or,
(ii) handover statements, that is statements which set out strategic policies and test old style development plans and any informal non-statutory plans in force, indicating to what extent these plans are still to be applied;
(iii) a provisional statement of its local policies by each District Council;
(iv) local or particular guidelines such as proposals affecting a particular conservation area or for a regional airport.31

When the City of Vancouver adopted in 1956 its Zoning and Development By-law, it had the intention of preparing a 20 year development plan.32 The enabling legislation, the Vancouver Charter, empowers the city to prepare development plans for the whole city or any particular area (Vancouver charter S. 561). Such a plan for the whole city has not been prepared. Official development plans for certain areas such as False Creek, the West End, Downtown have been prepared and adopted. However, no official development plan for any of the city's industrial areas has been prepared. On what basis then, is development approval granted or withheld for applications in the City's industrial areas? What planning policies and objectives serve as a guide to the granting or withholding of planning permission in industrial areas? The answers lie in the Zoning plan which was prepared by Bartholomew in 1929, and approved in 1930 together with the discretion exercised by the Director of Planning in considering those applications that require his specific approval.
The policies, guidelines and objectives to which the approval authority refers to have not generally been documented. Planning for the city's industrial areas, therefore, evolves with each development application approved. This study has shown that such micro level planning has, over a period of time, macro level consequences. For example, there may be little reason to refuse an application for a non-industrial use in an industrial area if the use is (a) permitted under the by-law, (b) for a small parcel of land, and (c) seen to have little or no injurious impact on the neighboring industrial uses. However, over a period of time a precedent of approvals is established. Once the long term consequences of such a practice are foreseen it is difficult, inconsistent and unfair to refuse similar applications in the future unless the planning authority is able to refer to some policy. Thus a major implication for planning practice arising from this study is its insight into the consequences of proceeding with planning approvals without reference to predetermined planning policies and objectives.

The institutional structures for planning in Britain show that planning permission was intended to be guided by predetermined planning policies. If the City of Vancouver and the regional government are serious about developing and implementing a positive land use policy for industry, it is important that local area plans for each of the remaining industrial areas in the city be prepared. There would appear to be little justification for approaching local planning for industrial areas in a manner that is different than the local planning activity underway in residential areas. In the latter case a commitment to citizen participation has been a significant characteristic. The citizens in industrial areas would be the owners and managers of industrial firms in each area.
The relationships between planning policy and planning permission is but one implication for planning practice arising from this study. The study has also probed the dilemma confronting the urban planner in planning for industry. In struggling with this dilemma there has been a tendency for urban planning to make overly simplistic assumptions about the characteristics of industry (light and heavy) and its location requirements. The study has presented evidence to show that location and land use requirements are variable both with respect to certain industries and with respect to the size of firms within the same industry.

In the past fifteen years considerable research effort has been devoted to various aspects of intrametropolitan industrial location. Yet, it seems that the results of this research are not reflected in current zoning by-laws, industrial land use policies or the knowledge base of urban planning.
Footnotes for Chapter V


4 City of Vancouver Planning Department, *Vancouver Urban Renewal Study*.


7 Greater Vancouver Regional District, *Industry and the Livable Region*.


9 Ibid.

10 Greater Vancouver Regional District, *The Livable Region Program 1976/86*. (Vancouver 1975)


12 Vernon and Hoover, *Anatomy of a Metropolis* Pg. 48


15 Ibid. Pg. 329.

16 Ibid. Pg. 330.


18 Ibid. Pg. 237.

19 Ibid. Pg. 241.

20 Ibid. Pg. 251.

21 Ibid. Pg. 255.

22 Ibid. Pg. 257.

23 City of Vancouver Planning Department. *Vancouver Urban Renewal Study*. Pg. 17.


26 Ibid. Pg. 24.

27 Ibid. Pg. 24
Footnotes for Chapter V (Continued)

28 Real Estate Board of Greater Vancouver, Real Estate Trends in Metropolitan Vancouver. (Vancouver 1978)


32 City of Vancouver Planning Department, General Explanatory Memorandum, Zoning and Development By-law No. 3575. (November 1963).
CHAPTER VI

SUMMARY AND CONCLUSIONS

This thesis has documented the evolution of industrial zoning in Vancouver and examined the relationship between current urban planning and industrial zoning practices and the changing pattern of land use in Vancouver's industrial areas. Early zoning by-laws were established to protect residential and commercial areas from the encroachment of industry. Planning legislation in more recent times has reflected a policy toward industry in urban areas that has ranged from restrictive control to neglect. Vancouver's planning legislation allows office commercial uses to be developed in industrial areas. The planning approvals granted under the legislation have not been guided by any comprehensive development plans or planning policies for the city's industrial areas. The impact of this practice on industrial land use in Vancouver was examined.

Data from the City of Vancouver's Development Permit records showed that in the period from January 1, 1971 to June 1, 1978, 61 applications for office and office/retail space in industrial areas were made. Thirty-four were approved, twenty-seven refused. The applications were concentrated in the City's inner industrial areas. Data from 1978 assessment records indicated that 83 office and office/retail buildings existed in industrially zoned areas. The concentration was again found to be in the inner city. Land use information showing the amount of land in commercial use in industrially zoned areas also confirmed the concentration
in the inner city. Finally an analysis of industrial land rezoned to non-industrial use and all trends in the supply of inner city industrial land showed that the supply of inner city industrial land was declining significantly.

The public policy implications of the thesis were discussed with the knowledge that the Council of the City of Vancouver has adopted a policy favouring industrial development in the City and the regional government is attempting to implement a policy of decentralizing both industrial and commercial employment opportunities. Vancouver's planning legislation is therefore contributing to a pattern of land use changes that does not support these policies.

The thesis examined the arguments in favour of retaining the existing industrial zoning provisions which have the effect of providing more land for service sector activities which normally occupy space in offices and retail areas. The arguments were found to be significant but tended to overestimate the beneficial impacts and neglect the negative consequences. Evidence suggesting that Vancouver's inner city industrial areas played a positive role in the city and regional economy as incubator space for new and small industries was also examined. This evidence was also significant. It is, therefore clear that there are trade-offs with either policy alternative.

As noted in Chapter I, Birch (1970) has suggested that central cities pass through a life cycle of changes from growth to saturation to stabilization to decline. This life cycle is driven by economic forces leading to the suburbanization of industry and population and economic specialization of the centrality as the service centre for
the metropolitan area. The position taken by planning organizations in reference to this "trend" is of considerable importance. If the trend is viewed as part of a natural process of evolution, the long term consequences of which are unknown, one could argue that public policy intervention is either inappropriate or futile. The role of the urban planner, therefore, becomes one of "referee" analysing trends and administering the by-law through the planning approval process. The evidence presented in this thesis suggests that this is the current position of the City of Vancouver Planning Department as far as industrial land use policy is concerned. The Department has however, embarked upon much more ambitious policy directions in the area of residential development (e.g. False Creek).

The other alternative is to acknowledge the life cycle hypothesis as having some validity, to analyse its economic and social consequences for cities such as Vancouver and to identify the public policy interventions that are available to modify the trend. This is the contribution that urban planning can make to the formulation of public policy. The implementation of policy, once formulated, involves the use of planning legislation the objectives of which are clear and in concert with policy directions.
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(M·1) Industrial District Schedule

(Light)

1. Uses permitted, conditions and regulations:

Subject to all the provisions of this By-law on any site within any district defined, designated or described in this By-law as an (M·1) District the only uses permitted, and the only uses for which development permits may be issued are those contained in Sections 1 and 2 hereof, provided, however, that development of any land abutting the streets set forth in Schedule “C” to this By-law shall be subject to the additional special regulations contained in Section 11.3 to this By-law. (2/1/63 — No. 4032)

A. Uses:

(1) REPEALED
(2) Animal hospital.
(3) REPEALED
(4) Automotive repair shop.
(5) Automobile and parts salesroom.
(6) REPEALED
(7) Bag and sack cleaning.
(8) Bakery (manufacturing of bread, pies, confectionary).
(9) Battery manufacturing or rebuilding.
(10) Boat building (boats not to exceed 80 feet in length).
(11) Book bindery.
(12) Brewery and distillery.
(13) Broom and brush manufacturing.
(14) Candy manufacturing.
(15) Cannery (fruit and vegetables only).
(16) Cigarette and cigar manufacturing.
(17) Clothing and garment manufacturing.
(18) Cold storage plant.
(19) Cosmetics manufacturing.
(20) Dairy products manufacturing.
(21) Electric equipment manufacturing.
(22) Electro-plating.
(23) Excelsior manufacturing or storage.
(24) Feed and seed storage.
(25) Food products manufacturing, processing and packaging (excluding fish and a cannery).
(26) Frozen food lockers.
(27) Parking garage (public). (30/12/57 - No. 3671)
(28) Gasoline service station, subject to the provisions of Section 11.10. (22/4/69 - No. 4423)
(29) Hemp and jute products manufacturing.
(30) Ice manufacturing.
(31) Institution of a religious, philanthropic, charitable or philozoic character.
(32) Jewellery manufacturing.
(33) Kennels or the keeping, breeding, raising, training or boarding of dogs or cats.
(34) Laboratory.
(35) Laundry, cleaning and dyeing establishment.
(36) Lithographing.
(37) Mattress manufacturing.
(38) Motion picture and television studio.
(39) Musical instrument manufacturing.
(40) Novelty and toy manufacturing.
(40A) Paper box and cardboard products manufacturing. (12/3/57 - No. 3622)
(41) Parking area (public).
(42) Poultry (dressed) wholesale and storage.
(43) Public utility on a site not less than 200 feet from any R District.
(44) Publishing plant.
(45) Radio and television broadcasting and receiving masts and antennae (commercial).
(47) Restaurant.
(48) Sausage manufacturing.
(49) School (business or commercial).
(50) School (trade).
(51) Shoe or boot manufacturing.
(52) Sign manufacturing.
(53) Stamp shop (rubber or metal).
(54) Taxidermy.
(55) Tent and awning and allied products manufacturing.
(56) Textile manufacturing.
(57) Tires retreading or rebuilding.
(58) Tool (machine) manufacturing.
(59) Toy and novelty manufacturing.

(60) REPEALED

(61) Warehouse (general).

(62) Wax products manufacturing (for derivation of products, see processing of fats, bones, animal products).

(63) Window shade manufacturing.

(64) Wholesale business.

(65) A building or use which is customarily accessory to the above principal buildings or uses except for a building or use which is only listed as a principal use in the (M-2) district, provided that:

(a) All accessory buildings shall occupy an area of not greater than 10 percent of the area of the site, and are not over 12 feet in height.

(b) All accessory uses shall occupy an area of not greater than one-third the total gross floor area of all the buildings on the site.

B. Front Yard:

No front yard shall be required.

C. Side Yard:

No side yard shall be required, provided, however, that where an (M-1) Industrial District adjoins any R District without the intervention of a street or lane, the following side yards shall be provided:

(1) Three feet in the case of an RA, RS, or RT District.

(2) Five feet in the case of an RM District.

If a side yard in an (M-1) District be provided where not required by the provisions of this By-law, the said side yard shall be not less than three feet in width.
D. Rear Yard:

A rear yard shall be provided the minimum depth of which shall be not less than 10 feet except as provided hereunder:

(1) Where the rear line of a site adjoins a dedicated lane the minimum depth of the rear yard may be reduced by an amount equal to the distance from the ultimate centre line of the lane to the rear line of the site.

(2) Where a site is sufficiently large and is located within an area where rear access to the site and adjacent sites is not likely to be required, the Director of Planning, in the exercise of his discretion, may waive the rear yard requirement. 

(21/11/67 — No. 4328)

E. Height:

The height of a building shall not exceed 100 feet. The Director of Planning, in the exercise of his discretion, may increase the height set forth herein, provided that the said building complies in all other respects with the regulations contained in this section.

(21/11/67 — No. 4328)

F. Floor Space Ratio:

The floor space ratio shall in no case exceed 5.00.

For the purposes of this schedule, in computing the floor space ratio the floor area of the building shall include the total area of all the floors of all the buildings on the site, including accessory buildings (measured to the extreme outer limits of the building), except for areas of floors used for parking purposes and areas of cellars or basements which are not used as habitable accommodation or access to habitable accommodation.

In addition, balconies, canopies, sundecks and other appurtenances which, in the opinion of the Director of Planning, are similar to the foregoing, may be excluded from floor area measurement, provided that the total floor area of all such excluded items does not exceed eight percent of the permitted floor area.

(30/8/66 — No. 4260)

G. Off-street Parking Spaces:

Off-street parking spaces shall be provided and maintained as required by, and in accordance with the provisions of Section 12 of this By-law.

H. Off-street Loading Spaces:

Loading and unloading spaces shall be provided and maintained as required by, and in accordance with the provisions of Section 13 of this By-law.

J. Vertical Light Angles for Office Buildings:

In the case of an office building of more than three storeys or 40 feet in height no part of such building above the third storey or above 40 feet shall project above lines extending toward the building at right angles from:

(1) All points along the ultimate centre line of the street (or streets) in front of the site and inclined at an angle of 60 degrees to the horizontal;
(2) All points along the rear boundary line of the site or the ultimate centre line of the lane where one has been dedicated, and inclined at an angle of 60 degrees to the horizontal;

(3) All points along the interior side boundary (or boundaries) of the site at ground level and inclined at an angle of 70 degrees to the horizontal;

(4) In the case of a corner site all points along the ultimate centre line of a flanking street or lane and inclined at an angle of 60 degrees to the horizontal;

Provided however that any part of a building shall be exempt from the appropriate vertical angle control above, if the exempt part of the building:

(a) has a horizontal dimension of 60 feet or less, measured parallel to the street, lane or boundary of the site, as the case may be, from which the said vertical angle is measured; and

(b) is not less than 80 feet from any part of the same building similarly exempt, measured in the same direction as the 60 feet specified in clause (a) of this proviso. (24/8/76 – No. 4997)

2. Uses which may be permitted subject to special approval by the Director of Planning:

With the approval of the Director of Planning development permits may be issued for the following uses. If the development permit is granted it shall be subject to such conditions and regulations as the Director of Planning may decide, provided, however, that development of any land abutting the streets set forth in Schedule “C” to this By-law shall be subject to the additional special regulations contained in Section 11.3 to this By-law. (2/1/63–No. 4032)

A. Uses (Group A):

(1) Ambulance headquarters. (12/3/57–No. 3622)

(1A) Auction room (sale and storage).

(1B) Archery range, golf driving range and miniature rifle range (in the open). (17/11/59–No. 3812)

(2) Automotive manufacture and body building.

(2A) Aviaries. (17/11/59–No. 3812)

(3) Billiard and pool hall.

(4) Bottling plant (milk or carbonated beverages).

(5) Bowling alley.

(6) REPEALED (22/3/66–No. 4234)

(7) Buildings or runs for the hatching and raising of live poultry, fowl, rabbits, frogs, fish, or worms.

(8) Building or use required by a public authority.

(9) Cannery (meat, poultry and pickles only).
(10) Car sales lot.
(11) Chemicals, manufacturing and mixing.
(12) Church.
(13) Clay and clay products manufacturing, excluding brick and tile.
(14) Cleaning and dyeing shop.
(15) Club, or lodge (fraternal).
(16) Community centre.
(16A) Community Residential Facility, provided that such adjacent property owners as may be deemed necessary by the Director of Planning be notified. (15/3/77 – No. 5061)
(17) Concrete mixing operations or concrete products manufacturing.
(18) Cooperage works.
(19) Deposit or extraction of material so as to alter the configuration of the land.
(20) Film exchange.
(21) Fish market (wholesale).
(22) Flour mill.
(23) Furniture manufacturing and storage.
(24) Gypsum products manufacturing.
(25) Hall.
(26) Home craft or occupation.
(27) REPEALED (5/5/60–No. 3840)
(28) Machine shop or blacksmith shop.
(28A) Marina (excluding boat building and major repairs to and overhaul of boats). (31/7/73–No. 4713)
(29) Monument or stone works.
(30) Office building.
(31) Paint, oil shellac, turpentine or varnish manufacturing, mixing or storage.
(32) Park or playground.
(33) Pet shop.
(34) Plastic products manufacturing.
(35) Poultry (live) sales and distribution.
(36) Poultry slaughtering market.
(37) Public utility other than as provided for in Section 1 of this schedule.
(38) Radio and television broadcasting and receiving station (commercial).
(39) Retail store, business or undertaking.
(40) Sash and door manufacturing.
(41) School (public or private), kindergarten, day-care school, creche or day nursery.
(42) Sheet metal works.
(43) Stable, barn or the keeping, breeding, raising, training, boarding of horses, cattle, goats and sheep.
(44) Stadium, curling rink, ice rink, roller rink, race track, gymnasium, or similar place of assembly.
(45) Steam baths.
(46) Storage yard provided it is enclosed by a suitable fence which is painted and neatly maintained at all times.
(47) Swimming pool (commercial).
(48) Theatre (excluding a drive-in).
(49) Truck terminal.
(49A) Truck garden, field crop, nursery, berry or bush crops, orchard or pasture land. (17/11/59—No. 3812)
(50) Undertaking establishment.
(51) REPEALED (31/7/62—No. 4007).
(52) Welding shop.
(53) Wiping rags and cotton waste (bulk storage).
(54) A dwelling unit for a caretaker or watchman or other persons similarly employed if such dwelling unit is considered to be essential to the operation of the business or the undertaking.
(54A) Temporary parking area (public). (10/11/64—No. 4139)
(55) Any other building or use which is not specifically listed in any schedule of this By-law, and which is similar to the foregoing buildings or uses; before granting a development permit for such building or use the Director of Planning shall have regard to the types of buildings and uses which specifically may be permitted in this schedule. (12/3/57—No. 3622)
(55A) A building which has been altered or used for a dwelling unit, housekeeping or sleeping unit, boarding or rooming house, prior to June 18th, 1956, with or without one or more of the required City permits.
(56) Any building or use which can be considered as accessory to the above uses and to the uses listed in Section 1 of this schedule, other than those accessory buildings or uses for which provision is made in such Section.
B. Uses (Group B) which may only be granted by the Director of Planning:
   (1) Aircraft landing place.
   (2) Building or use customarily accessory to the above uses.
(M·1A) Industrial District Schedule

(Light—Residential Community) (16/3/76—No. 4951)

1. Uses Permitted, Conditions and Regulations:

Subject to all the provisions of this By-law on any site within any district defined, designated or described in this By-law as an (M-1A) District, the only uses permitted and the only uses for which development permits may be issued are those contained in Section 2 hereof, provided, however, that development of any land abutting the streets set forth in Schedule "C" to this By-law shall be subject to the additional special regulations contained in Section 11.3 to this By-law.

A. Front Yards:

No front yard shall be required, except where an (M-1A) Industrial District adjoins any R District, the front yard shall be 10 feet, with landscaping provided to the satisfaction of the Director of Planning.

B. Side Yard:

No side yard shall be required, except where an (M-1A) Industrial District adjoins any R District, the side yard shall be 10 feet, with landscaping provided to the satisfaction of the Director of Planning.

If a side yard in an (M-1A) District be provided where not required by the provisions of this By-law, the said side yard shall be not less than three feet in width.

C. Rear Yard:

A rear yard shall be provided the minimum depth of which shall be not less than 10 feet except as provided hereunder:

(1) Where the rear line of a site adjoins a dedicated lane the minimum depth of the rear yard may be reduced by an amount equal to the distance from the ultimate centre line of the lane to the rear line of the site.

(2) Where a site is sufficiently large and is located within an area where rear access to the site and adjacent sites is not likely to be required, the Director of Planning, in the exercise of his discretion, may waive the rear yard requirement.

(3) Where an (M-1A) Industrial District adjoins any R District, the rear yard shall be 10 feet, with landscaping provided to the satisfaction of the Director of Planning.
D. **Height:**
The height of a building shall not exceed 60 feet.

E. **Floor Space Ratio:**
The floor space ratio shall in no case exceed 5.00.

For the purpose of this schedule, in computing the floor space ratio the floor area of the building shall include the total area of all the floors of all the buildings on the site, including accessory buildings (measured to the extreme outer limits of the building), except for areas of floors used for parking purposes and areas of cellars or basements which are not used as habitable accommodation or access to habitable accommodation.

In addition, balconies, canopies, sundecks and other appurtenances which, in the opinion of the Director of Planning, are similar to the foregoing, may be excluded from floor area measurement, provided that the total floor area of all such excluded items does not exceed eight percent of the permitted floor area.

F. **Off-street Parking Spaces:**
Off-street parking spaces shall be provided and maintained as required by and in accordance with the provisions of Section 12 of this By-law.

G. **Off-street Loading Spaces:**
Loading and unloading spaces shall be provided and maintained as required by and in accordance with the provisions of Section 13 of this By-law.

2. **Uses which may be permitted subject to approval by the Director of Planning:**
With the approval of the Director of Planning, development permits may be issued for the following uses. If the development permit is granted, it shall be subject to such conditions and regulations as the Director of Planning may decide, with due regard to the following:

(1) Provision of appropriate landscaping;

(2) Design, character and choice of building material in relation to adjoining R zoned land.

(3) Development of any land abutting the streets set forth in Schedule “C” to this By-law shall be subject to the additional special regulations contained in Section 11.3 to this By-law.

A. **Uses (Group A):**

(1) Animal hospital
(2) Automotive repair shop
(3) Automobile and parts salesroom
(4) Bakery (manufacturing of bread, pies and confectionery)
(5) Boat building (boats not to exceed 80 feet in length)
(6) Book bindery
(7) Brewery and distillery
(8) Broom and brush manufacturing
(9) Candy manufacturing
(10) Cannery (fruit and vegetables only)
(11) Cigarette and cigar manufacturing
(12) Clothing and garment manufacturing
(13) Cold storage plant
(13A) Community Residential Facility, provided that such adjacent property owners as may be deemed necessary by the Director of Planning be notified. (15/3/77 — No. 5061)
(14) Cosmetics manufacturing
(15) Dairy products manufacturing
(16) Electric equipment manufacturing
(17) Electro-plating
(18) Excelsior manufacturing or storage
(19) Feed and seed storage
(20) Food products manufacturing, processing and packaging (excluding fish and a cannery)
(21) Frozen food lockers
(22) Parking garage (public)
(23) Gasoline service station, subject to the provisions of Section 11.10
(24) Hemp and jute products manufacturing
(25) Ice manufacturing
(26) Institution of a religious, philanthropic, charitable or philozoic character.
(27) Jewellery manufacturing
(28) Kennels or the keeping, breeding, raising, training or boarding of dogs or cats
(29) Laboratory
(30) Laundry, cleaning and dyeing establishment
(31) Lithographing
(32) Mattress manufacturing
(33) Motion picture and television studio
(34) Musical instrument manufacturing
(35) Novelty and toy manufacturing
(36) Paper box and cardboard products manufacturing.
(37) Parking area (public)
(38) Poultry (dressed) wholesale and storage
(39) Public utility on a site not less than 200 feet from any R District
(40) Publishing plant
(41) Radio and television broadcasting and receiving masts and antennae (commercial)
(42) Radio broadcasting and receiving station for motor vehicles, trains, watercraft and aircraft
(43) Restaurant
(44) Sausage manufacturing
(45) School (business or commercial)
(46) School (trade)
(47) Shoe or boot manufacturing
(48) Sign manufacturing
(49) Stamp shop (rubber or metal)
(50) Taxidermy
(51) Tent and awning and allied products manufacturing
(52) Textile manufacturing
(53) Tires retreading or rebuilding
(54) Tool (machine) manufacturing
(55) Toy and novelty manufacturing
(56) Warehouse (general)
(57) Wax products manufacturing (for derivation of products, see processing of fats, bones, animal products)
(58) Window shade manufacturing
(59) Wholesale business
(60) Ambulance headquarters
(61) Auction room (sale and storage)
(62) Archery range, golf driving range and miniature rifle range (in the open)
(63) Automotive manufacture and body building
(64) Billiard and pool hall
(65) Bottling plant (milk or carbonated beverages)
(66) Bowling alley
(67) Building or use required by a public authority
(68) Cannery (meat, poultry and pickles only)
(69) Car sales lot
(70) Chemicals, manufacturing and mixing
(71) Church
(72) Clay and clay products manufacturing, excluding brick and tile
(73) Cleaning and dyeing shop
(74) Club or Lodge (fraternal)
(75) Community Centre
(76) Concrete mixing operations or concrete products manufacturing
(77) Cooperage works
(78) Deposit or extraction of material so as to alter the configuration of the land
(79) Film exchange
(80) Flour mill
(81) Furniture manufacturing and storage
(82) Gypsum products manufacturing
(83) Hall
(84) Home craft or occupation
(85) Machine shop or blacksmith shop
(86) Monument or stone works
1. **Uses permitted, conditions and regulations:**

Subject to all the provisions of this By-law on any site within any district defined, designated or described in this By-law as an (M-2) District the only uses permitted and the only uses for which development permits may be issued are those contained in Sections 1 and 2 hereof, provided, however, that development of any land abutting the streets set forth in Schedule “C” to this By-law shall be subject to the additional special regulations contained in Section 11.3 to this By-law. (2/1/63 — No. 4032)

A. **Uses:**

1. REPEALED (8/10/74 — No. 4811)
3. REPEALED (17/11/59 — No. 3812)
4. Automotive repair shop.
5. Automobile and parts showroom.
6. Automotive manufacturing and body building.
7. REPEALED (17/11/59 — No. 3812)
8. Bag and sack cleaning.
10. Battery manufacturing or rebuilding.
13. Bottling plant (milk or carbonated beverages).
14. Brewery or distillery.
17. Cannery (fruit and vegetables only).
(20) Cold storage plant.
(21) Cooperage works.
(22) Cosmetics manufacturing.
(23) Dairy products manufacturing.
(24) Electric equipment manufacturing.
(26) Excelsior manufacturing or storage.
(27) Feed and seed storage.
(28) Fish market (wholesale).
(29) Flour mill.
(30) Food products manufacturing, processing and packaging (excluding fish and a cannery).
(31) Frozen food lockers.
(32) Furniture manufacturing and storage.
(33) Parking garage (public). (30/12/57 – No. 3671)
(34) Gasoline service station, subject to the provisions of Section 11.10. (22/4/69 – No. 4423)
(35) Gypsum products manufacturing.
(36) Hemp and jute products manufacturing.
(37) Ice manufacturing.
(38) Institution of a religious, philanthropic, charitable or philozoic character.
(39) Jewellery manufacturing.
(40) Kennels or the keeping, breeding, raising, training, or boarding of dogs or cats.
(41) Laboratory.
(42) Laundry, cleaning and dyeing establishment.
(43) Lithographing.
(44) Machine shop or blacksmith shop.
(45) Mattress manufacturing.
(46) Monument or stone works.
(47) Motion picture and television studio.
(48) Musical instrument manufacturing.
(49) Novelty and toy manufacturing.
(49A) Paper box and cardboard products manufacturing. (12/3/57 – No. 3622)
(50) Parking area (public).
(51) Plastic products manufacturing.
(52) Poultry (dressed), wholesale and storage.
(53) Public utility on a site not less than 200 feet from any R District.
(54) Publishing plant.
(55) Radio broadcasting and receiving masts and antennae (commercial).
(56) Radio broadcasting and receiving station for motor-vehicles, trains, water-craft and aircraft.
(57) Restaurant.
(58) Sausage manufacturing.
(59) School (trade).
(60) Sheet metal works.
(61) Shipbuilding.
(62) Shoe or boot manufacturing.
(63) Sign manufacturing.
(64) Stamp shop (rubber and metal).
(65) Taxidermy.
(66) Tent and awning and allied products manufacturing.
(67) Textile manufacturing.
(68) Tires, retreading or rebuilding.
(69) Tool (machine) manufacturing.
(70) Toy and novelty manufacturing.
(71) REPEALED (17/11/59 — No. 3812)
(72) Warehouse (general).
(73) Wax products manufacturing; (for derivation of products see processing of fat, bones, animal products).
(74) Wholesale business.
(75) Window shade manufacturing.
(76) Wiping rags and cotton waste (bulk storage).
(77) A building or use which is customarily accessory to the above principal buildings or uses except for a building or use which is only listed as a principal use in the (M-2) District with the consent of the Director of Planning, provided that:
   (a) All accessory buildings shall occupy an area of not greater than 10 percent of the area of the site, and are not over 12 feet in height.
(b) All accessory uses shall occupy an area of not greater than one-third the total gross floor area of all the buildings on the site.

B. Front Yard:
No front yard shall be required.

C. Side Yard:
No side yard shall be required, provided, however, that where an (M-2) Industrial District adjoins any R District without the intervention of a street or lane, the following side yards shall be provided:

1. Three feet in the case of an RA, RS, or RT District.
2. Five feet in the case of an RM District.

If a side yard in an (M-2) District be provided where not required by the provisions of this By-law, the said side yard shall be not less than three feet in width.

D. Rear Yard:
A rear yard shall be provided the minimum depth of which shall be not less than ten feet except as provided hereunder:

1. Where the rear line of a site adjoins a dedicated lane the minimum depth of the rear yard may be reduced by an amount equal to the distance from the ultimate centre line of the lane to the rear line of the site.
2. Where a site is sufficiently large and is located within an area where rear access to the site and adjacent sites is not likely to be required, the Director of Planning, in the exercise of his discretion, may waive the rear yard requirement. (21/11/67 — No. 4328)

E. Height:
The height of a building shall not exceed 100 feet. The Director of Planning, in the exercise of his discretion, may increase the height set forth herein, provided that the said building complies in all other respects with the regulations contained in this section. (21/11/67 — No. 4328)

F. Floor Space Ratio:
The floor space ratio shall in no case exceed 5.00.

For the purposes of this schedule, in computing the floor space ratio the floor area of the building shall include the total area of all the floors of all the buildings on the site, including accessory buildings (measured to the extreme outer limits of the building), except for areas of floors used for parking purposes and areas of cellars or basements which are not used as habitable accommodation or access to habitable accommodation.

In addition, balconies, canopies, sundecks and other appurtenances which, in the opinion of the Director of Planning, are similar to the foregoing, may be excluded from floor area measurement, provided that the total floor area of all such excluded items does not exceed eight percent of the permitted floor area. (30/8/66 — No. 4260)
G. Off-street Parking Spaces:

Off-street parking spaces shall be provided and maintained as required by, and in accordance with the provisions of Section 12 of this By-law.

H. Off-street Loading Spaces:

Loading and unloading spaces shall be provided and maintained as required by, and in accordance with the provisions of Section 13 of this By-law.

J. Vertical Light Angles for Office Buildings:

In the case of an office building of more than three storeys or 40 feet in height no part of such building above the third storey or above 40 feet shall project above lines extending toward the building at right angles from:

1. All points along the ultimate centre line of the street (or streets) in front of the site and inclined at an angle of 60 degrees to the horizontal;

2. All points along the rear boundary line of the site or the ultimate centre line of the lane where one has been dedicated, and inclined at an angle of 60 degrees to the horizontal;

3. All points along the interior side boundary (or boundaries) of the site at ground level and inclined at an angle of 70 degrees to the horizontal;

4. In the case of a corner site all points along the ultimate centre line of a flanking street or lane and inclined at an angle of 60 degrees to the horizontal;

Provided however that any part of a building shall be exempt from the appropriate vertical angle control above, if the exempt part of the building:

(a) has a horizontal dimension of 60 feet or less, measured parallel to the street, lane or boundary of the site, as the case may be, from which the said vertical angle is measured; and

(b) is not less than 80 feet from any part of the same building similarly exempt, measured in the same direction as the 60 feet specified in clause (a) of this proviso. (24/8/76 – No. 4997)

2. Uses which may be permitted subject to special approval by the Director of Planning:

With the approval of the Director of Planning development permits may be issued for the following uses. If the development permit is granted it shall be subject to such conditions and regulations as the Director of Planning may decide, provided, however, that development of any land abutting the streets set forth in Schedule “C” to this By-law shall be subject to the additional special regulations contained in Section 11.3 to this By-law. (2/1/63—No. 4032)

A. Uses (Group A):

1. Abbatoir or slaughter house.

1A. Ambulance headquarters. (12/3/57—No. 3622)

1B. Archery range, golf driving range and miniature rifle range (in the open). (17/11/59—No. 3812)
(2) Automobile wrecking.

(2A) Aviaries.  (17/11/59—No. 3812)

(3) Blast furnace operation.

(4) REPEALED  (22/3/66—No. 4234)

(5) Buildings or runs for the hatching and raising of live poultry, fowl, rabbits, frogs, fish, or worms.

(6) Building or use required by a public authority.

(7) Cannery (fish, meat, poultry, pickles).

(8) Car sales lot.

(9) Chemicals, manufacturing and mixing.

(10) Church.

(11) Clay and clay products manufacturing.

(12) Club, or lodge (fraternal).

(13) Coal distillation.

(13A) Community Residential Facility, provided that such adjacent property owners as may be deemed necessary by the Director of Planning be notified.  (15/3/77 — No. 5061)

(14) Concrete mixing operations or concrete products manufacturing.

(15) Deposit or extraction of material so as to alter the configuration of the land.

(16) Explosives manufacturing or storage.

(17) Fertilizer manufacturing or storage.

(18) Fish (smoking, canning, curing, cleaning, packing).

(19) Fish oil or meal manufacturing or storage.

(20) Foundry.

(21) Gas (compressed), manufacturing or storage.

(22) Gelatine manufacturing.

(23) Grain elevator.

(24) Hall.

(25) Home craft or occupation.

(26) Incinerator.

(27) Lime manufacturing or storage.

(28) Linoleum and oilcloth manufacturing.

(29) REPEALED  (31/7/62—No. 4007)
(29A) Marina (excluding boat building and major repairs to and overhaul of
boats).  (31/7/73—No. 4713)

(30) Matches manufacturing or storage.

(31) Metal smelting, refining, reduction.

(32) Office building

(33) Paint, oil shellac, turpentine or varnish manufacturing, mixing or storage.

(34) Park or playground.

(35) Petroleum, bitumen, tar products or derivatives, refining, mixing or bulk
storage.

(36) Poultry (live), sales and distribution.

(37) Poultry slaughtering market.

(38) Processing of fat, bones, fish, hides, skins, offal and animal products of a
like nature.

(39) Public utility other than as provided for in Section 1 of this schedule.

(40) Pulp manufacturing.

(41) Rags, baling and storage.

(42) Retail store, business or undertaking.

(43) Rolling mill.

(44) Rubber manufacturing or treatment.

(45) Sash and door manufacturing.

(46) Sawmill.

(47) School (public or private), kindergarten, day-care school, creche or day
nursery.

(48) Size manufacturing.

(49) Smelter or refinery.

(50) Stable, barn, or the keeping, breeding, raising, training, boarding of horses,
cattle, goats or sheep.

(51) Stadium, curling rink, ice rink, roller rink, race track, gymnasium or
similar place of assembly.

(52) Stock yard.

(53) Storage yard, provided it is enclosed by a suitable fence which is painted
and neatly maintained at all times.

(53A) Temporary parking area (public).  (10/11/64—No. 4139)

(54) Truck terminal.
(54A) Truck garden, field crop, nursery, berry or bush crops, orchard or pasture land. (17/11/59—No. 3812)

(55) Undertaking establishment.

(56) Vegetable oil or fat refining and storage.

(57) Welding shop.

(58) A dwelling unit for a caretaker or watchman or other persons similarly employed if such dwelling unit is considered to be essential to the operation of the business or undertaking.

(59) Any other building or use which is not specifically listed in any schedule of this By-law and which is similar to the foregoing buildings or uses; before granting a development permit for such building or use the Director of Planning shall have regard to the types of buildings and uses which specifically may be permitted in this schedule. (12/3/57—No. 3622)

(59A) A building which has been altered or used for a dwelling unit, housekeeping or sleeping unit, boarding or rooming house, prior to June 18th, 1956, with or without one or more of the required City permits.

(60) Any building or use which can be considered as accessory to the above uses and to the uses listed in Section 1 of this schedule, other than those accessory buildings or uses for which provision is made in such section.

B. Uses (Group B) which may only be granted by the Director of Planning:

(1) Aircraft landing place.

(2) Building or use customarily accessory to the above uses.
APPENDIX B

DEVELOPMENT PERMITS FOR OFFICE AND OFFICE/RETAIL BUILDINGS IN INDUSTRIAL AREAS JANUARY 1, 1971 – JUNE 1, 1978.

GRANVILLE AND BURRARD

APPROVED

2301 Granville
1525 W. 8th Ave.
1770 Burrard
1645 W. 7th Ave. (X 2)
1555 W. 8th Ave.
1401 W. 8th Ave.
1663 W. 7th Ave.
1701 W. 4th Ave.
1412 W. 7th Ave. & 2305 Hemlock
1524 W. 6th Ave.
1575 W. 7th Ave.
1774 W. 5th Ave.

REFUSED

1737 W. 2nd Ave.
1523 W. 3rd Ave.
1525 W. 8th Ave.
1555 W. 6th Ave.
1632 W. 6th Ave.
1635 W. 7th Ave.
1555 W. 8th Ave.

ARBUTUS AND 12th AVE.

APPROVED

2184 W. Broadway
2215 W. 10th Ave.
2006 W. 10th Ave.
2256 W. 10th Ave.
2034-2050 W. 12th Ave. (X 2)

REFUSED

NIL

CAMBIE AND 2nd AVE.

APPROVED

201 W. 6th Ave.
2425 Quebec
111 E. 5th Ave.

REFUSED

5 W. 7th Ave.
141 E. 7th Ave. (X 3)
399 W. 6th Ave.
291 E. 2nd Ave.
106 E. 3rd Ave.
225 W. 2nd Ave.
106 E. 7th Ave.
305-311 W. 8th Ave.
2425 Quebec.

POWELL STREET

APPROVED

195 Alexander
2019 Dundas & 2012-2018 Wall
310-316 Victoria

REFUSED

195 Alexander
1603 Franklin
490 Commercial
316 Victoria
### FAIRVIEW SLOPES

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* **INCLUDES FALSE CREEK FLATS AND FALSE CREEK AND EAST END, CLARK DRIVE, LOUGHEED AND BOUNDARY, JOYCE ROAD.**