MARINE DRIVE, NORTH VANCOUVER: Can it become pedestrian oriented?

by

ERIC RALPH SANDBERG

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Department of Community and Regional Planning

The University of British Columbia
Vancouver, Canada

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ABSTRACT

Mixed land use policies are being recognized as a way to help ameliorate the ills of single land use precincts. Policies which perpetuate these precincts are inflexible, unresponsive to change, and are beginning to make North American cities sterile. Further, economic and ecological pressures dictate that we begin to reconfigure urban space. Mixed land uses and compact form must replace segregation and urban sprawl. Mixed commercial and residential, pedestrian-oriented corridors offer one way of dealing with this issue.

Mixed use commercial/residential corridors have attracted interest in the Planning field. In the District of North Vancouver Planners and community members wish to explore the possibility of transforming the municipality's Marine Drive corridor into a lively and attractive, pedestrian friendly, mixed-used commercial street. Recent amendments to the Official Community Plan suggest that the corridor is undergoing changes. However, there is a question as to whether or not Marine Drive would make a viable pedestrian-oriented commercial corridor.
This thesis investigates potential for pedestrian orientation along Marine Drive. Two of Vancouver's mixed-use commercial corridors were studied in order to discern the ingredients necessary for success. Analysis focuses on history and policy initiatives, as well as current zoning and surrounding developments. Next, Marine Drive is studied. Evidence suggests that attempting to transform Marine Drive into a pedestrian-oriented, lively, mixed commercial and residential corridor is premature, and may be difficult to achieve in the future. General North Shore commercial and geographic characteristics and specific conditions along Marine Drive are not favourable. However, it may be possible to begin transforming Pemberton Avenue (an important Marine Drive cross street) into a pedestrian-oriented corridor.
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CHAPTER ONE: INTRODUCTION

CONTEXT

Planning literature indicates a growing interest in the concept of mixing land uses. This age old concept is enjoying a rebirth in the form of traditional style mixed-use commercial corridors. Mixed-use corridors are compact, attractive, pedestrian friendly, and lively mixed commercial/residential streets located within an urban area. They are attracting interest as a way of reducing automobile commuting and managing regional growth. Further, they are seen by some as an utopian way of living, offering a better sense of community and increased convenience.

The mixed commercial corridor concept has attracted the interest of Planners and citizens in the District of North Vancouver. Specifically, it has prompted District Planners to begin exploring the possibility of revitalizing the municipality's Marine Drive corridor. The corridor currently functions as a major east west arterial and automobile dependent commercial strip, housing auto-oriented commercial users.

Marine Drive has been targeted as an area of concern for two main reasons. First, the current plan, which governs land use polices for the Marine Drive area, is nearing the end of its
intended time horizon. Second, and perhaps more interesting, the scope of the current plan is no longer responsive to emerging conditions along the corridor.

The "Marine Drive Official Community Plan" was first adopted on February 23, 1985, and was intended to guide development for a period of five to ten years. The plan has been amended several times and is currently in the process of being superseded by the "Lower Capilano Official Community Plan." The current process is especially interesting due to the changing nature of the corridor. Recent amendments have generally resulted in increased residential densities and a mixing of land uses. The current plan permits such conditions, yet does not encourage them. Thus, District Planners now wish to explore the possibility of redirecting the corridor's land use policies. New policies would concentrate on revitalizing the corridor through an intensification of commercial activity and an increase in mixed-use commercial/residential activity.

The intent of this thesis is to meet a request by North Vancouver District Special Projects Planner Ross Taylor for study and analysis of Marine Drive's potential. It is intended to help guide the District's development of land use policies for the Lower Capilano Official Community Plan that relate to the
transformation of Marine Drive into a more lively and vibrant pedestrian-oriented commercial corridor.

OBJECTIVES

The objective of this thesis is to answer three specific questions:

1. Is it appropriate to attempt to transform Marine Drive into a lively traditional style commercial street?

2. If so, what should the corridor's "revitalization" entail? -- Specifically, what land use policies should the District of North Vancouver adopt in this regard?

3. What can we learn by studying other mixed-use commercial corridors?

SCOPE AND LIMITATIONS

As is the case with any urban study, examining the future of a commercial corridor should involve the inclusion of countless variables. Urban conditions do not exist in isolation, but function as a complex system of interrelated events, conditions and circumstances. Events that appear unrelated often elicit a dramatic change in the urban phenomena of interest.
Nevertheless, not all events can be studied. Three potentially important issues which will not be studied in detail are as follows: "big box" retail stores, the future of the Lions Gate Bridge, and the future of a Low Level Road in the District of North Vancouver. Outlined below is a brief account of their potential significance.

Large scale retail outlets have become a significant trend in the retail industry. Many of these large format, or "big box" retailers, like to locate in industrially zoned land due to lower land costs and property tax. Because much of the land surrounding Marine Drive is zoned industrial, many such retailers are likely to consider locations on or near Marine Drive. "Of particular note is the potential for a large-scale retailer ... to locate on the Fullerton Fill site south and east of the study area" (Harris 1994, 11). If a "big box" retail outlet were to locate in close proximity to the Marine Drive corridor it would have a profound impact on the nature of the street.

The future of the Lions Gate Bridge and a Low Level road could also have a dramatic impact on Marine Drive. Essentially, developments of this sort will impact traffic volume and flow along the street and thus have an impact on the creation of a pedestrian-oriented environment.
METHODOLOGY

This thesis employs field research as the method of analysis. Specifically, two case studies were conducted in order to gain an understanding of what makes a mixed-use commercial corridor function well. As this type of field research typically yields more qualitative than quantitative data, the thesis does not include extensive statistical analysis. Two case studies were performed as there are no "typical" commercial corridors. Instead, each exemplify matchless characteristics dictated by surroundings, history, and policy initiatives, among other things. Further, they are dynamic.

The two Vancouver streets used as case studies are: Broadway between Larch and Collingwood Streets; and, Granville Street between 63rd and 70th Avenues (See Figure One). Broadway was chosen as an example of a successful street, while Granville was chosen as an example of a less successful street.
Figure 1: Location Map: Broadway, Granville and Marine Drive
STRUCTURE AND OVERVIEW

The thesis comprises five chapters. This introductory chapter simply outlines the context and framework for analysis.

Chapter two, *The Case for Mixed-use*, reviews the literature pertaining to the mixing of land uses. It explores how mixed-use patterns fell into disuse with the introduction of land use zoning in the early industrial period. The chapter then outlines various pressures and societal changes that dictated a re-birth of the concept. This includes a look at household formations, regional growth, and livability and affordability issues. Next, the benefits of mixed land use patterns are outlined. Finally, chapter two explores how increased acceptance of mixed-use patterns has triggered the recent interest in mixed commercial corridors.

Chapter three, *Vancouver's Commercial corridors*, outlines case study research and findings. In an attempt to determine how to "recreate" traditional streets, the discussion focuses on learning the characteristics and circumstance of Broadway and Granville Street. This discussion involves the examination of a number of factors that come to bear on the functioning of each street. Initially, commonalities are discussed. Following this, each street is explored, paying particular attention to history,
current and future use, planning policy, zoning, surroundings, movement patterns, and design considerations. Finally, case study findings, and hence, "the requirements of a successful mixed-use commercial street" are outlined. Nine components are listed as being integral to success. Despite being a simplified extraction, the list offers insights in an easy to understand format.

Chapter four, Recreating Marine Drive?, studies the potential of creating a condition similar to Broadway's along Marine Drive. Analysis echoes the format used for the previous two case studies. This allows realistic comparisons between Vancouver's streets and Marine Drive. Background information explains how Marine Drive's current condition came to be, and why it has not evolved into a pedestrian-oriented mixed commercial corridor. Last, this chapter explores specific issues regarding potential "revitalization." Keeping in mind specific issues and constraints, the thesis suggests abandoning efforts directed toward revitalizing Marine Drive. Instead, it suggests an approach utilizing Marine Drive as a component of more a complex urban system, centred around the cross street Pemberton Avenue. Further, it emphasizes that conditions will change very slowly.
Chapter five, *Policy Recommendations*, suggests policy initiatives that might be adopted by the District of North Vancouver. Several of the policy recommendations could have profound impacts, affecting more than just conditions on or near Marine Drive. Thus, areas where further study may be required are outlined next. The complex nature of the topic necessitates future study.
CHAPTER TWO: THE CASE FOR MIXED-USE

INTRODUCTION

The concept of mixing land uses is not new. As Lewis Mumford illustrates in his 1961 book, The City in History, as early as 480 BC urban settlements were defined by mixed land use patterns. Integral to the character of the Greek Polis, for example, was a landscape comprised of market places, gymnasiums, and theaters (159). Nonetheless, despite its early existence, the practice of mixing land uses has fallen into disuse in recent history. This can be attributed to two phenomena: the practice of land use zoning, and technological advancements which enabled increased freedom of movement. These phenomena, each reinforced by the other, have created a monotonous and artificially segregated urban landscape, void of vitality, unresponsive to new social realities, and ecologically unsustainable. The current land use patterns, if left unaltered, will severely undermine the vital characteristics of communities. Only now, when the problem is becoming magnified and more severe, are we willing to take the steps necessary to correct it. In attempting to ameliorate the current problem we are borrowing concepts from the past. Society is beginning to recognize the ills of current land use
segregation, and is thus attempting to recreate once paramount mixed land use patterns of development.

THE ILL EFFECTS OF ZONING TRIGGER A RESPONSE

Zoning developed in the early industrial period as a reaction to the incompatibility of heavy industrial and residential functions. It began as a legitimate tool to separate discordant land uses. However, it quickly adopted a social function and became a tool to segregate "social entities." In short, it evolved as a means to legitimize ethnic and socio-economic segregation.

Segregation was further increased by technological advancements in the field of personal movement. In the early industrial period, the rich were capable of putting only marginal lateral distances between themselves and the poor. However, as transportation technology progressed so too did the distance between different segments of society. The physical segregation of society culminated with the advent of the automobile. Today the segregation of land uses and inhabitants is a way of life in North America.

The literature indicates that current zoning is making North American cities sterile. Few stop to consider the enormous
impact zoning has on the way we conduct our day to day lives. Because it affects the placement and relationships between the places we live, work, shop, and recreate, zoning's role is paramount. Moreover, because current zoning policies generally segregate land uses and related human activities, basic patterns of existence are being fundamentally altered. We are losing the benefits of community and convenience and the patterns of human existence are being unnecessarily fractured.

Zoning also determines the value of a piece of land by establishing what can or cannot occupy each particular parcel. The "commodification" of land has a massive impact on the way we arrange space. Questions regarding the creation of community, or livable environments are now being asked after questions regarding profit. We are not thinking hard enough about the integrity and importance of people and places. "So [development] is not really an expression about what we think about human life, but an expression of the monetary system" (Wagner 1994, B1).

Fortunately, many developers are discovering that mixed use schemes can provide greater protection from financial risk. This fact alone will not solve the current problems of imbalance and segregation, however. Changes are now being realized as people are becoming disenchanted with land use segregation. This
disenchantment is coupled with a realization of mixed use's many attributes, and a desire by many to seek new lifestyles.

PRESSURES AND CHANGES DICTATE A RE-BIRTH OF MIXED USE

Attributes of mixed use are being re-discovered because zoning has rendered our urban environments sterile. Equally important are unprecedented pressures and changes.

Changing household sizes are making new types of residential accommodations more important. Moreover, as is evidenced by literature regarding environmental degradation, people are becoming aware of the unsustainability of current land use patterns. Suburban sprawl, perpetuated by current land use policies, is being recognized as an inefficient way of accommodating regional growth, exacerbating problems of pollution and finite land resources. Further, misconceptions about density are now being allayed. The literature indicates that higher density housing forms are emerging not only as a response to affordability issues, but as a lifestyle preference (City of Richmond 1991). Many people now choose to live in higher density accommodations in order to live closer to work and services, and thus decrease commuting time and increase leisure time. Multi family homes are preferred by first time buyers, empty nesters,
and special needs households (UDI 1993). As these groups continue to increase in size, there must be suitable housing opportunities available to them. In order to accommodate a high standard of living, people now appear willing to make the necessary lifestyle changes.

**Household formation**

Available accommodations are no longer meet the needs of all who may potentially occupy them. In the Vancouver Metropolitan Region changing demographic trends are making traditional forms of single family housing less important. The rise of smaller households, those comprised of one or two people, has increased steadily, from forty-one percent of the total in 1961 to fifty-nine percent of the total in 1993 (GVRD August 1993, 14).

Smaller households are dictating the provision of smaller dwelling units. As a study done by the Greater Vancouver Development Services Department exemplifies, "one of the most striking features of household formation over the past two decades has been the significant increase in the propensity among all age groups to occupy apartment accommodations" (Greater Vancouver Development Services 1984, 3). This is further emphasized by a recent Urban Development Institute survey, which
indicates that "based on demographic trends, it is reasonable to suggest that only about 25 percent of new housing needs to be geared to families, mostly as single family homes" (UDI 1993, 1).

Regional growth: population and pollution

Many of the attributes of mixed use and increased density are misunderstood, however, as a tool for regional growth management they are gaining wide spread support (UDI 1993). People in the Lower Mainland realize that past forms of development, if perpetuated, will exacerbate problems such as pollution and the degradation of agricultural land. They understand the necessity of a more compact metropolitan region. This was exemplified in a November 1992 conference, "Shaping our Communities". Most conference participants felt that growth should be concentrated in the already urbanized areas of the Burrard Peninsula and the developing communities of the North East Sector (i.e. Coquitlam and Maple Ridge) and North Surrey. These sentiments were echoed by Vancouverites, who stated they are not opposed to population growth "as long as the population bulge is absorbed by dense nodes of housing" (Griffin 1994, B2). These are very important revelations.
The Lower Mainland's population is expected to grow by seventy percent, reaching nearly three million by 2021 (GVRD Sept. 1993). This growth will create unprecedented traffic and pollution problems. For example, projecting the current Lower Mainland travel patterns, where seventy three percent of all journeys to work are made by the private automobile (D'Amour 1991, 19), road vehicles will reach two million (GVRD Sept. 1993). People in the region will have to travel further and slower in order to perform daily activities.

Eighty percent of all atmospheric pollution in the Lower Mainland currently comes from mobile sources - i.e. automobiles and trucks (City of Vancouver Task Force 1990, 17). In 1985 this resulted in 308,000 tones of carbon monoxide emissions (GVRD 1993). Obviously, as the region grows, and there is an increased separation between workplace, shopping, recreation and homes, levels of pollution will increase. Where people live and work within the region has important ramifications on traffic congestion and vehicle emissions, and must be appropriately adjusted.
Affordability

Adjustments to our patterns of development are also arising as responses to affordability concerns. Essentially, low density neighbourhoods are costly. Several studies illustrate the burgeoning problem of rising land costs in the Lower Mainland. The cost of land, required when building a single family home, now accounts for more than fifty percent of the total accommodation price. Traditionally this has not been the case. Given the new reality we are forced to decrease land parcel sizes in order to decrease the purchase price of residential units. This situation necessitates higher density development.

The pressures and changes outlined above illustrate the need for drastic changes in the way we arrange and configure space. Increased densities are required. These can be achieved through infill, new development, or redevelopment. Residential infill can be problematic. Increased densities in existing residential areas are virtually always confronted with opposition from existing residents (Spaxman 1986). New development which perpetuates urban sprawl is an undesirable option. Thus, most gains can be made through redevelopment which intensifies the use of currently underutilized urban land by adding a mix of housing, shopping, working and recreating opportunities. This can be
accomplished by re-creating traditional mixed use commercial corridors. Borrowing from the past, this vision can be developed to create an environment which has an intricate mix of land uses, high densities, emotional appeal and character, and, benefits the pedestrian.

THE BENEFITS OF MIXED USE

As was outlined, pressures related to population, pollution, and equity are mounting. Nonetheless, this alone will not prompt most individuals to adopt a new pattern of existence. We must ask: what else makes mixed-use development attractive? Specifically, why do North Vancouver residents wish to see corridors, such as Marine Drive, transformed into traditional style mixed commercial streets? The answer is simple: mixed-use offers countless benefits.

People are beginning to consider the attributes of mixed use. Mixed use development can offer not only economic savings and reductions in pollution, but increased access to services, increased personal safety, improved social integration, and increased diversity. Further, it can help to improve the mental health of inhabitants by offering a better overall quality of life.
Revisiting Traditional Concepts

These qualities are being revisited through a return to traditional planning principles. Traditional Main Streets, which were once integral to the functioning of North American villages, acting as physical and cultural centres, are once again becoming important. Basic qualities are being rediscovered. These streets promise a life which is simpler, slower, and safer. Essentially, they work to transform commercial corridors into community streets.

Apart from the obvious emotional appeal, traditional style mixed-use streets offer a compact gathering of housing, groceries, shops, offices, and entertainment opportunities, allowing one to easily preform daily tasks. They offer more intriguing community interaction as they are inhabited by people of diverse age groups and income levels, and they are friendly to pedestrians. They are places were one can safely and easily walk to shop, work or recreate. They work to put the pedestrian back on the street -- or at least next to it (Bookout 1992, 24).
Traditional planning concepts have gained the support of many. Integral players in the "neotraditional" movement include the California planner Peter Calthorpe and the architect team of Andres Duany and Elizabeth Plater-Zyberk. These individuals have helped focus discussions on the importance of traditional concepts. Neo-traditionalists wish to channel new growth into compact, tightly woven communities with housing, offices, and stores within walking distance of each other (Bressi 1992, 101).

The principles stressed by neotraditionalists are basic planning concepts which are gaining in popularity.

Peter Calthorpe is best known for what his concept of Transit-Oriented Developments (TOD's). TOD principles can be applied to existing communities, or can be used to create whole new cities. Essentially, a TOD is a small town centred around a transit station. Since public transit works best when pedestrian access is convenient, the size of these communities is limited by easy walking distance to a transit station (Bressi 1992, 102). The community is designed around the station. It includes a mix of buildings at a high density, and ensures that residential and commercial areas are knit together.
Calthorpe draws inspiration from the urban design theorist Leon Krier, who in his book *Urban Space* advocates that traditional streets are the basis of community design (Bressi 1992, 103). He closely follows Krier's argument that all necessities of urban life should be accessible by foot within mixed-use communities.

Krier's thinking also appears to have influenced Duany and Plater-Zyberk. This team promotes what they term Traditional Neighbourhood Developments (TND's). TND's echo many of the attributes of Calthorpe's TOD's. They emphasize a mix of housing, shops etc. in close proximity to one another. They strongly reflect traditional American small town in both function and architectural style. Duany, Plater-Zyberk feel that a longing for Disneyland style Main Streets illustrates more than simple nostalgia. It shows that people desire the attributes of small towns (Duany 1992, 99).

**Putting the concepts to use**

People are recognizing the attributes of mixed-use being promoted by Calthorpe, Duany, Plater-Zyberk and others. Many now understand the economic benefits, and are beginning to realize the many qualitative bonuses offered by traditional style mixed
use developments. Benefits include a better sense of place and a better overall quality of life.

**Economic attributes**

Increased density, offered by mixed-use scenarios, is cheaper. In high density developments the costs for roads and utilities are about 55 percent lower than those traditionally incurred. Operating and maintenance costs for utilities are also lower. Energy consumption also tends to be less (MacDonald 1990, 1-2). Higher density development offers excellent opportunities for making housing more affordable. In the City of Vancouver, mixed use residential and commercial zones have been identified as an area where substantial numbers of moderately priced condominium units could be created (Neale 1991, 1). The economic benefits of high density mixed use are indisputable.

Nevertheless, these attributes, although important, will not single handedly lead to a profound retrofitting of space. People's emotions play an integral role in the creation of acceptable land use patterns. Economically viable options must also be attractive using intangible measures such as "sense of place."
Sense of place

The sense of an urban settlement refers to the "clarity with which it can be perceived and identified" (Lynch 1981, 131). The concept is best analyzed as an interaction between a person and a place whereby perceptions are shaped by the spatial form and quality of a place, as well as the culture, temperament, status, experience, and current purpose of the observer (Lynch 1981, 131). The experience of any one place is likely to be different for different observers.

Places which have a stronger sense, quite simply, are those which have some form of identity. Identify allows people to recall a place as being distinct and memorable. Physical form and design does create a sense of place. However, attention must be paid to form and design in order to ensure that a place has a unique, or at least particular, character of its own.

Some feel this concept is not receiving enough attention. Many argue society is currently being threatened by those in control, as planners, developers, and architects are systematically building meaningless places (Walter 1988, 2). Because decisions regarding physical design affect the way people live, we must have a clear understanding of what constitutes a memorable place.
In recent history, the mixing of land uses was deemed inappropriate. Mixed use districts were seen as chaotic, and as such were not considered good urban places. However, as Jane Jacobs outlines, the "intricate mingling of different uses in cities are not a form of chaos. On the contrary, they represent a complex and highly developed form of order" (1961, 222). Thus, in our quest to alleviate the perceived chaos of mixed use we have created monotonous environments which we now deplore. The sameness of single use landscapes can not elicit a strong sense of place. Lacking in significant variation, these landscapes are placeless, and become deeply confusing. People need variations and differences in order to direct their movement. Thus, in order to create atmospheres of "buoyancy, friendliness and health" (Jacobs 1961, 9), we must mingle buildings used for living, shopping, working and recreating.

The adoption of mixed use development patterns does not mean we have to abandon attributes of single use landscapes. Characteristics which elicit a strong sense of place and well-being should be enhanced. Single family homes often allow personal "identity, privacy, security and control" (UDI 1993, 39). These features can be offered quite simply in higher density mixed use environments through the use of single family
design features such as balconies, bay windows, dormers, lofts, fireplaces and the like.

**Livability and quality of life**

As Sue Crowhurst illustrates in her article "Urban Space Design and Social Life", a livable environment provides occasions and places for people to experience satisfying and enjoyable contacts, and feel like members of a community (1990, 2). According to this criterion traditional single family neighborhoods are failing as livable places. Low density landscapes, segregated by land use, do not provide ample opportunities for people to meet and foster a strong sense of community. Thus, people living in such landscapes often feel alienated and lonely. This is especially true for the young or old. Physical constraints, resulting from an environment which assumes the use of automobiles for mobility, tend to ghettoize these people.

Traditional style mixed-use streets, on the other hand, offer livable environments, and a good overall quality of life. They create opportunities for neighbours and friends to meet and socialize. Further, they bring a diverse cross-section of individuals together, allowing increased social interaction.
Mixed commercial corridors provide for young and old, women and men, and for a variety of ethnic and socioeconomic groups. They generate opportunities for expression and exploration. Moreover, they allow better access to the various amenities and services required by a diverse group of people.

In short, traditional style mixed commercial corridors work to create communities. This explains their magnetism. People are attracted to the vibrancy and safety of this type of community. For some, traditional style corridors are seen as vivacious sanctuaries. Evidence from the literature supports their claims. It illustrates how these developments allow more opportunity for crime prevention through increased surveillance. Moreover, it emphasizes how mixed use traditional style streets bustle with a variety of activities throughout the day.

RE-BIRTH OF AN OLD CONCEPT

One may question why we have taken so long to re-discover the benefits of mixed uses. The fact is, despite its slow evolution, the renewed acceptance of traditional style mixed-use corridors has been evolving for almost as long as the divergence toward land use segregation. The concept is based on a number of long-standing ideas that have been implemented, forgotten, and
now seem to be relevant again. Examples of past ideas include: Ebenezer Howard's Garden City movement, which represented a rejection of suburban sprawl, and an affection for self-sufficient "mixed use" cities; Jane Jacobs' notions on the importance of physical and functional diversity in urban environments; Andres Duany's neo-traditional town planning principles; and Peter Calthorpe's transit-oriented development guidelines (UDI 1993, 79).

CONCLUSION

As is evidenced by the literature there are pressures for change in our patterns of land use and development. Currently, environmental concerns are becoming more important, affordability concerns are becoming more pointed, and household formations are changing. Perhaps even more important, lifestyle preferences are also changing. People are demanding a high quality of life. They desire the increased convenience created when various activities are mixed together. Furthermore, they want friendlier communities and neighborhoods. They desire opportunities to meet, interact and socialize with others. This should come as no surprise, as humans are social animals.
In short, mixed use commercial corridors are being recognized as a means to meet the demands of today's society and tackle the problems associated with past land use patterns.
INTRODUCTION

Traditional mixed-use commercial streets exemplify a means of achieving desired land use patterns (See Figure Two). Thus, the question becomes: how can we create "new" mixed-use commercial streets which embody the attributes of traditional mixed-use corridors? The obvious approach is to look at existing mixed commercial streets to discern how they came to be, and further, whether they can be recreated. This is precisely the objective of the next two chapters. This chapter explores two Vancouver commercial corridors as case studies. Chapter Four examines the Marine Drive Corridor in North Vancouver to determine whether or not it can work as a traditional style mixed-use commercial corridor.

The attributes of mixed commercial corridors have sparked interest in the planning community and in the general public. In the District of North Vancouver this is best illustrated by the current process of amending the Lower Capilano Official Community Plan. Those involved express interest in the possibility of
recreating the Marine Drive strip. This recreation is to include a significant shift in street character; best described as an evolution from a strip mall to a traditional commercial shopping district.
Figure 2: Examples of Traditional style mixed use commercial streets

West 4th Avenue, Vancouver

Ambleside, West Vancouver
The current Marine Drive Official Community Plan (which will be superseded by the new Capilano OCP) perpetuates a long-standing North Vancouver planning policy that recognizes the corridor as an automobile-dependent strip. People are now questioning whether or not this orientation is still appropriate.

One of the District's current objectives is to determine the requirements necessary for a successful mixed-use commercial corridor. The fulfilment of this objective must include an understanding of other mixed-use commercial strips. More specifically, it should include a detailed understanding of past and present policy initiatives, historical circumstances, and the current role and function of each street.

With this objective in mind, this thesis will explore two Vancouver commercial strips -- West Broadway between Larch and Collingwood, and Granville South between 63rd and 70th Avenue (See Figure Three).
Figure 3: West Broadway and Granville South Context

Broadway Avenue

Granville Street
Because the determination of success or failure hinges on personal judgment, specific criteria as to what constitutes a successful urban commercial strip must be established. The criteria utilized in this thesis reflects attributes the District of North Vancouver wishes to achieve along Marine Drive. A successful street is defined as an attractive, pedestrian friendly, mixed-use commercial and residential strip. It is lively and active throughout the day. Further, it elicits a strong sense of community and place. It has an urban feel, perpetuated by higher density development. Yet, at the same time, it is a "livable" environment.

THE CASE STUDIES

Broadway and Granville Street exemplify a number of similar characteristics. A brief retail and planning policy discussion will precede the more detailed case studies.

RETAILING PATTERNS

Patterns of retail activity evolve over long periods of time through varied conditions. Past decisions are often unique, as the scale and context of urban problems are continually changing.
Thus, each of Vancouver's commercial streets exemplifies a number of peerless characteristics. Nevertheless, Broadway and Granville have commonalties.

Early mixed-use commercial streets were confined by the modes of available transportation. The advent of electric street cars contributed most to the indicative early twentieth century pattern. In Vancouver, the British Columbia Street Car aided in the creation of important outlying strips of commercial development. Such strips owe their existence to the street car, developing and evolving as merchants located along the line-ways and at major intersections.

These "unplanned" Vancouver commercial areas grew up essentially as required. Consequently, they exemplify a genuine mixed land use pattern. Despite textural differences, these commercial strips have evolved into classifiable entities which fit into a commercial hierarchical pattern. This pattern includes three classifications based on the range of goods and services and the size of serviced area -- regional, district, and local centres (Arbour 1979, 4).

Local centres are those which provide convenience goods required by nearby residents on a day to day basis. They generally house grocery stores, dry cleaners, and drugstores, and
service less than 10,000 people within a radius of approximately one half mile.

District centres are those which, in addition to the above, function as a retail and service centre for the residential district. Such centres usually include large supermarkets, variety stores, and some specialty stores. District centres also often contain facilities such as theaters, community centres, or libraries. These centres are generally larger than local centres servicing approximately 30,000 people in a one mile radius.

Regional centres serve a distinct function. Normally these centres act as a focal point for a large segment of the metropolitan area. They are second only to the central business district in commercial importance, and are therefore considerably larger, usually serving 100 - 300,000 people within a four mile radius. Metrotown in Burnaby, Oakridge in Vancouver, and Park Royal in West Vancouver are all examples of regional centres.

In this study, Broadway and Granville Street are considered district commercial centres. These centres can be broken into two additional categories: those which function primarily as urban arterials, and those which function as traditional shopping streets. Urban arterials comprise establishments that require large amounts of space and attract an infrequent clientele.
Traditional shopping streets, on the other hand, normally attract customers who walk to shop, generally arriving directly from home (Davies 1984, 63). The strongest district centres include elements of both function, relying on convenience stores to add urban appeal and diurnal activity, and larger stores to add variety and comparison shopping.

Broadway and Granville function primarily as traditional shopping streets, yet have some characteristics indicative of urban arterials. Each street's current level of success depends largely on the balance struck between these two components.

PLANNING POLICY

Because both case studies are within the City of Vancouver's jurisdiction, they share a common planning policy history. The most significant policy initiative resulted from increasing development pressure on the residential areas of Vancouver in the late 1980's. Demand for housing units in the built up areas of the city was beginning to outweigh supply. Thus, City Council requested an exploration of ways to increase housing opportunities within the city. The resultant report identified three ways of increasing housing capacity while minimizing public cost and limiting the impacts on existing communities. Included
in the list was a proposal to make better use of the city's existing mixed-use commercial/residential C-2 zones by adding a substantial number of housing units above commercial shops. To that end, in July 1989 City Council removed F.S.R. disincentives to residential use in the C-1 and C-2 zones (Neale 1991, 1).

Initiation of the 1989 policy was not intended to revitalize faltering urban commercial strips. Instead, it emerged as a response to housing shortages. Nonetheless, the initiative had important implications for many urban commercial strips. It has helped protect and shape several Vancouver streets.

This policy greatly strengthens a desirable mixed land use pattern by making it easier to add residential units to a street. "Previously, residential space was calculated at 2.5 times that of commercial space in floor space calculations" (Hulchanski 1990, 41). Thus, developers found it economically undesirable to create residential units, and successful commercial streets risked a potentially undesirable mix of land uses characterized by an overemphasis of commercial space. The 1989 initiative removed the "constraint from the Zoning Schedule so that residential space [was] calculated at the same rate as commercial space" (Hulchanski 1990, 41). It was estimated that this could
add 5500 housing units in commercial districts outside of downtown (Neale 1991, 5).

This zoning adjustment has led to some problems. Several of the initial development applications under the new policy had significant design problems concerning noise and daylighting of interior rooms (Neale 1991). A study by Neale, Staniszkes, Doll Architects cites that it was virtually impossible to achieve the allowable F.S.R. limit within the building envelope. Hence, the study recommended a reduction of the maximum allowable residential F.S.R. This recommendation has yet to be acted upon; however, it is important, and should be kept in mind when suggesting policy direction for North Vancouver District.

VANCOUVER'S COMMERCIAL STREETS

WEST BROADWAY (Between Larch and Collingwood Streets)
1. History

Broadway's growth began in the early part of this century. Development in the Kitsilano area was enhanced in 1909 when private developers convinced BC Electric Railway Company to run a street car line down Fourth Avenue to Alma Street (Davis 1976, 87). As a result, within a year the area north of Fourth Avenue to the beach was completely developed.

By the early 1910's Broadway was beginning to take shape. A street car line, which greatly enhanced the commercial vitality of the street, had been extended west on Broadway to near Trafalgar. However, despite early development, Fourth Avenue remained the most important commercial strip, and attracted concentrated residential development around it.

The next impetus to development came in 1932 with the completion of the Burrard Street bridge (Davis 1976, 87). By the 1930's Broadway was littered with commercial enterprises, and began to resemble the urban commercial strip which exists today, albeit at a more local scale.

By 1945 Kitsilano was undergoing immense change. Increased development and land use intensification came with the opening of a new Granville Street bridge which brought trolley buses to the area (Sun, May 1990). Zoning was changed to allow for the
construction of apartments, and the present Kitsilano form of higher density apartment districts traversed by urban commercial streets began to take shape.

2. Current Use and Activity

West Broadway has an important place in the hierarchy of Vancouver's urban streets, and acts both as a local shopping street, and as a specialty shopping district.

Although perhaps not as popular as its northern counterpart, Fourth Avenue, Broadway has become a fashionable street. Street-side cafes and coffee shops have created an atmosphere that attracts both local, and more distant residents. Coffee shops such as Starbucks Coffee at 2902 West Broadway, and Grabba Jabba at 2699 West Broadway have aided in the creation of this ambiance. These shops are quickly becoming the community gathering places for neighbourhoods like Kitsilano. They have taken on a role similar to traditional British Public Houses, whereby they represent a place where local residents can gather and meet people from the community (See Figure Five).

Broadway has a lively and diverse character and feel. There is a notably high level of pedestrian activity, and the street appears busy throughout the day. The environment is congenial
and non threatening. Moreover, the ethnic character, emphasized by a plethora of Greek restaurants, helps establish a unique identity and sense of place.
Figure 5: Community Meeting Places

Grabba Jabba Coffee House, located on West Broadway, Vancouver
3. Future Trends

The mixed-use pedestrian orientation which currently characterizes West Broadway is expected to intensify in the future, primarily as a result of current zoning. The zones C-2C, and C-2C1 ensure that new development serves to perpetuate the present land use pattern.

It is hypothesized that Broadway will begin to take on a more important role as a district commercial shopping corridor as more mixed-use developments continue to add shops and residences. However, despite increased commercial and residential activity, it is unlikely Broadway's popularity as a shopping destination will surpass Fourth Avenue's.

4. Planning Policy

Planning policy for West Broadway has focused on preserving the positive features which already existed as a product of the area's history. Policy initiatives have characteristically resulted from the efforts of merchants and commercial property owners. Such efforts have prompted City Planners to develop careful and responsive policies that aid in the protection and enhancement of the commercial strip.
More than two decades ago, in April of 1970, the first "revitalization" actions were requested by Broadway's merchants and shop owners. The West Broadway Merchants and Owners Committee made a presentation to City Council requesting the initiation of a beautification project for the area (Vancouver City Planning, 1976). This action prompted both a feasibility study and the appointment of a design consultant in 1972. By 1976 efforts had escalated, and planning staff were busy working on a plan for West Broadway.

The new plan initiated measures designed to ensure the preservation of this unique commercial district. Moreover, it emphasized the significance of intensifying the existing pattern through the introduction of increased residential units.

The central planning issue in 1976 was the determination of the role of the West Broadway commercial strip. After this was determined the desirable elements in terms of use, density and parking requirements were decided upon. The resolution of this issue at an early stage in the planning process was appropriate, and should be replicated when attempting to create a plan for Marine Drive.

Planning studies indicated that Broadway functioned well as a district shopping centre, and the function should be further
enhanced. In order to achieve this it was determined that the current C-2 zoning must be reworked to encourage residential uses, and to help keep the infiltration of general commercial business at bay.

A residential component was deemed integral to Broadway's continued success. To this end the 1976 plan proposed two policies intended to increase Broadway's residential component. The first policy encouraged new development to include a residential component. The second policy suggested the rezoning of "excess" commercial land to residential. This was to take place at the fringes of the main concentration of commercial activity, and thus would not only supplement the residential support market, but help concentrate the remaining commercial area into a more clearly defined core (Vancouver City Planning, 1976).

As general business can be detrimental to the healthy functioning of a commercial strip, the policing of such an infiltration on Broadway was deemed important. General business uses are normally automobile oriented and draw customers from outside the district for single purpose trips. An example might include the introduction of a large supermarket which, if not handled properly, can have a detrimental impact on the economic
viability of adjacent food stores, and on the continuity and ambiance of the commercial strip (Vancouver City Planning, 1976). Supermarket chains often wish to provide large areas of parking between the sidewalk and the store. This does not help create an urban oriented pedestrian environment, but rather breaks up the continuity of retail frontage which is considered to be of great importance to successful shopping streets (Vancouver City Planning, 1976). Thus, the plan suggested the reinforcement of results achieved through careful administration of conditional uses. It also included a more explicit zoning schedule outlining specific uses and frontage and building setbacks.

5. Zoning

Current zoning fulfils the objectives outlined in the 1976 plan. The West Broadway commercial strip, between Larch and Collingwood, comprises two zones: C-2C, and C-2C1. C-2C is a "core area" zone, whereas C-2C1 functions as a "fringe area" zone. The two zones are designed to work in conjunction to produce a mixed-use pedestrian-oriented urban strip.

The intent of these zones, as outlined by the Vancouver City Planning Department, is as follows:
C-2C (core area)

The intent of this Schedule is to provide for a wide range of goods and services, to maintain commercial activities and personal services that require central locations to serve larger neighbourhoods, districts or communities and to encourage creation of a pedestrian-oriented district shopping area by increasing the residential component and limiting the amount of office use.

C-2C1 (fringe area)

The intent of this Schedule is to provide for a wide range of goods and services, to maintain commercial activities and personal services that require central locations to serve larger neighbourhoods, districts or communities and to encourage creation of a district shopping area by increasing the residential component and limiting the amount of office use.

Note the subtle difference between these zones. Their intent is virtually identical, except the core area zone creates a stronger pedestrian orientation. This is important. Evidence suggests that intense pedestrian-oriented commercial strips can only be successfully maintained over small lateral distances. In recognition of this, Vancouver Planners created two zones, and
thus were able to build upon the naturally occurring pattern of core/periphery intensity of activity along Broadway.

C-2C and C-2C1 vary slightly with regards to approved uses. This is to ensure the core area maintains attributes deemed essential for the success of a pedestrian commercial strip. Thus, C-2C1 (the peripheral zone) generally permits more uses such as multiple dwelling, manufacturing uses, and parking uses. Further, the C-2C1 zone permits drive in restaurants, and motor vehicle repair shops, both of which tend to break up the commercial continuity and take away from the overall pedestrian environment if permitted in the core area.

Regulations created to project a particular ambiance and streetscape apply to both zones. For example, both zones set the maximum frontage at 15.5 m (50 ft). This regulation ensures a diverse streetscape at a pedestrian scale. Moreover, building setbacks for both zones are only permitted where a pedestrian or shopping courtyard or other feature which benefits a pedestrian character is provided. Additionally, permitted F.S.R's regulate against excessively large or non conforming buildings. F.S.R's for both zones can not exceed 1.2 for purely office uses, 1.5 for purely residential uses, and 3.0 for all other uses.
6. Surroundings

The immediate surroundings of a mixed-use commercial strip dictate the street's success to a large degree. Essentially, sufficient population densities are required within a relatively short distance. The ethnic composition and socioeconomic status of surrounding residents are also important; however, they generally prescribe the composition and type of commercial and residential uses rather than overall success. Further, success is substantially influenced by the relationship with other commercial entities and amenities.

West Broadway is located in south Kitsilano. Kitsilano's boundaries, as defined by the City for planning and administrative purposes, stretch from the English Bay waterfront to 16th Avenue and from Burrard to Alma Streets. As was alluded to in the "History" section, Kitsilano can best be characterized as an apartment district. According to census figures many of those living in Kitsilano's low-rise apartments are renters. Because approximately 70% of residents are tenants, Kitsilano is a relatively mobile neighbourhood (Stats Can 1991). This can be an attribute to local commercial enterprises as it continually exposes new consumers.
The neighbourhood has a number of primary zoning districts ranging from RS-1 (one-family dwellings) to RM (multiple dwellings), and including both commercial and industrial zones. To the north of the Broadway case study area are both RT-2 and RT-7 zones. These districts are intended to permit two-family dwellings and, in some instances, low density multiple-family housing. To the south of Broadway is a RS-1S zone. The RS-1S district is intended to be primarily a single family residential district; however, it conditionally permits two family dwellings. Currently this district has only 47.5 percent single-detached houses -- for the Greater Vancouver area the average is 48.8 percent (Stats Can 1991, 44). The growth of two family dwellings is expected to persist.

The Kitsilano districts adjacent and directly surrounding the west Broadway case study area have substantially lower densities than those typical for much of Kitsilano. Given that local shoppers constitute a large portion of Broadway's clientele, and assuming people are willing to walk approximately eight to ten minutes (roughly 8 blocks) in order to obtain convenience goods, it is hypothesized that West Broadway draws substantially from the lower density areas. This suggests that it may not be necessary for high density residential zones to flank a
commercial street, as long as sufficient densities exist within a reasonable distance.

The above holds true with one important proviso. As was outlined, Broadway's C-C2 zoning encourages the development of higher density residential units along the street. Thus, although the street may draw limited clientele from the high density areas beyond its borders, it attracts substantial clientele from the high density accommodations abutting the street. This may become more pointed in the future. Under existing zoning there is capacity for the potential addition of 1,500 additional housing units in Kitsilano's commercial districts (Kitsilano Community Profile 1993, 7). Furthermore, all new projects currently under construction along this segment of the corridor contain a substantial residential component.

Surrounding socioeconomic characteristics aid in the success of West Broadway. Integral to success is the age structure and disposable income of the surrounding residents. Kitsilano's population structure is characterized by a large proportion of people between the ages twenty and forty; fifty six percent (See Table 1). Note that this is seventeen percent greater than for Vancouver as a whole. This is an important to the success of Broadway as this age group is most likely to patronize local

53
commercial establishments. They are generally more mobile than their younger or older counterparts, and spend a larger percentage of their discretionary time frequenting restaurants and the like.

Table 1: Kitsilano Age Structure

<table>
<thead>
<tr>
<th></th>
<th>Kitsilano</th>
<th>Vancouver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Age (1986)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>seniors age 65+</td>
<td>11%</td>
<td>15%</td>
</tr>
<tr>
<td>residents age 40 to 64</td>
<td>21%</td>
<td>26%</td>
</tr>
<tr>
<td>residents age 20 to 39</td>
<td>56%</td>
<td>39%</td>
</tr>
<tr>
<td>children under age 19</td>
<td>12%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Source: Statistics Canada

Average household income for Kitsilano residents is greater than for most neighbourhoods throughout the city. In 1986 Kitsilano residents had an average household income of $43,198. This was 34% higher than the city average of $32,403 (Kits Community Profile 1993, 3). In essence, higher household incomes translate into a higher level of disposable income, aiding the success of Broadway's shops.

Success is also determined by a commercial strip's proximity to other commercial entities. West Broadway, between Larch and Collingwood, fares well in this regard. A significant proportion
of the study area's consumer traffic results from "spin offs" associated with the intense commercial node located further east along Broadway. The Central Broadway area, bounded by Vine Street in the west and Prince Albert Street in the east, has become a major component of Vancouver's total office space and a viable alternative to the downtown CBD for general office users. Thus, this area attracts large volumes of people, many of which patronize establishments further west on Broadway during lunch, before or after work.

There are no major shopping centres located near West Broadway. Shopping streets, such as West Broadway, fill the void. This situation intensifies the significance of such retail strips in Vancouver's west side neighbourhoods.

7. Movement Patterns

"Broadway is a major east-west arterial... linking UBC in the west with Burnaby and other points to the east" (Central Broadway Guidelines 1993, 6). The roadway receives moderate traffic volumes, yet is assumed to be near operating capacity. Higher volumes would necessitate the removal of curbside parking. Increases in traffic volume on selected streets within the Kitsilano neighbourhood suggest that future traffic congestion on
Broadway is not a concern. Data indicates a 19% traffic volume increase over the past ten years for Kitsilano; whereas, City wide traffic volumes increased by 34% over the same time period (Kits Community Profile 1993, 4).

Traffic volume counts, taken on a Wednesday in February 1993, indicate that Broadway is impacted by commuter flows. However, there is also a substantial amount of diurnal traffic (See Table 2). This relatively constant level of activity greatly benefits the commercial strip. Retail establishments located along the corridor benefit from a nearly constant flow of prospective clientele.

Table 2: Broadway Traffic Counts

<table>
<thead>
<tr>
<th>TRAFFIC VOLUMES</th>
<th>BROADWAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>(At Trafalgar Street)</td>
<td></td>
</tr>
<tr>
<td><strong>East Bound</strong></td>
<td></td>
</tr>
<tr>
<td>7 am - 9 am</td>
<td>1188</td>
</tr>
<tr>
<td>4 pm - 6 pm</td>
<td>1675</td>
</tr>
<tr>
<td>7 am - 6 pm</td>
<td>8012</td>
</tr>
<tr>
<td>24 hours</td>
<td>12096</td>
</tr>
<tr>
<td><strong>West Bound</strong></td>
<td></td>
</tr>
<tr>
<td>7 am - 9 am</td>
<td>1048</td>
</tr>
<tr>
<td>4 pm - 6 pm</td>
<td>1725</td>
</tr>
<tr>
<td>7 am - 6 pm</td>
<td>7776</td>
</tr>
<tr>
<td>24 hours</td>
<td>11490</td>
</tr>
</tbody>
</table>

Source: Traffic Management, City of Vancouver
Broadway is classified as a truck route; however, field analysis indicate that truck traffic is not a serious detriment to the street. The corridor is also a major transit route, thus playing a primary role in the City's transportation system. Bus service is good along Broadway with service to and from Burnaby and UBC, and to many points between. This characteristic is vital to the success of any commercial strip. Easy access by public transit invokes a pedestrian environment by offering alternative means of arrival for consumers.

8. Design Considerations

I. Use and Activity

a) Extent of Diversity

West Broadway functions as a cohesive unit. Between Collingwood and Larch is, in a sense, a homogenous capsule, composed primarily of small scale commercial enterprises. Nonetheless, taken at a smaller scale, the strip is also diverse. Store frontages are generally smaller than fifty feet, and many stores exemplify unique architectural details. Further, store front awnings are a variety of different shapes and colours. Despite looking somewhat contrived, this has the effect of adding
to the visual diversity of the street. In short, West Broadway is functionally homogenous, and visually diverse.

b) Residential Units

More residential units abut West Broadway than Granville South. Occurring particularly at Macdonald Street and East to Trafalgar, and again west of Trutch to Waterloo Street, four story buildings, with ground floor commercial and residential units above, define the street scape.

Most of the mixed-use residential buildings along this segment of West Broadway were built since the early 1980's. The developments range in size, configuration, architectural style and density. Lot frontages range from less than eighty feet to over three hundred and twenty, and densities from less than fifty units per acre to more than one hundred and ten. Nonetheless, similarities in height and massing, and the exclusive use of commercial on the ground floor perpetuate a unified street scape. Average density for projects located in the study area (and built before 1991) is approximately ninety units per acre. The average floor space ratio for the residential component of these projects is roughly 2.0 FSR with an overall floor space ratio of approximately 2.8 (Neale 1991). The mixed-use residential
developments along Broadway between Larch and Collingwood add in excess of three hundred residential units to the otherwise commercial street.

c) Parking

Curbside parking is permitted throughout the Broadway study area. The retention of on street parking along Broadway is an integral component to its continued success. Evidence suggests that once on street parking is removed, even if only during peak hours, the feasibility of creating or maintaining a pedestrian friendly traditional style street is greatly diminished.

The "penetration" rate for those streets without curb side parking is considerably lower than for streets with on street parking. The location of parking must respond to the demands of motorists and pedestrians. Naturally, most motorists wish to park as close to their destination as is possible. If inadequate parking exists, those who may prefer to shop on an urban commercial strip may instead patronize shopping malls for the sole reason of parking convenience (Vancouver Parking Study).

Another advantage to on street parking is the creation of a buffer between the roadway and sidewalk. This roadside buffer makes the sidewalk safer for pedestrians.
d) Nodes

A well-defined node exists at Macdonald Street and extends west to Trutch. This results partially from historical patterns of development. However, the continued intensification of this node is due primarily to explicit policy actions taken by the City of Vancouver.

West Broadway's success owes much to the heightened level of activity at Macdonald. The node houses the most intensive commercial and residential land uses, and as such creates a strong sense of place and an unmistakably urban feel. There is an almost constant bustle of activity which signifies to the participant that they have reached a destination of importance.

II. Street Level

a) Street Trees, Street Furniture, Landscaping and Lighting

As a result of a beautification project first initiated in the mid 1970's; West Broadway is well endowed with street furniture, street trees and the like. Mature street trees flank both sides of the study area. This is accentuated in some locations by grass or shrubbery at the base of the trees and between sidewalks and the roadway. Street furniture including benches, garbage cans and bike lock ups is found at various locations along the
strip. Ornamental lighting, reminiscent of turn of the century lamp standards, lines the street. Further, the sidewalks and crosswalks are finished with interlocking paving stones and textured concrete. These physical characteristics help create a unified street scape.

b) General Commercial/Office Uses

General commercial uses tend to disrupt the continuity of pedestrian-oriented urban streets. They often introduce parking lots or service bays, and thus discourage people from walking by lengthening the distance between "pedestrian" uses. Moreover, they visually disrupt an otherwise unified display of retail uses making the street less appealing.

Office uses at grade have a similar effect. Such uses generally do not need a grade level location as they don't rely on pedestrian traffic for their well being. These types of uses are best located on the second or third floor.

The Broadway study area is characterized by predominately retail uses at ground level. Service stations, repair shops and offices are limited in number and generally do not disrupt the atmosphere and functioning of the street. Some anomalies, such as the Petro Canada service station on the southwest corner of
Macdonald and Broadway, fracture the pedestrian network slightly. Nonetheless, it appears that when such uses are anomalies their effect is diluted.

c) Pedestrian Environment

The condition of a street's pedestrian environment is integral to its success as a commercial corridor. Of utmost importance is the level of comfort and safety afforded to users. Rain, wind and sun protection provide a pedestrian amenity. Further, street parking and effective crosswalks help to create a safe pedestrian environment.

West Broadway has a congenial and safe pedestrian environment. Awnings, canopies, colonnaded facades, bus shelters, and street trees allow rain and sun protection. Curbside parking provides a pleasant and safe atmosphere by reducing air and noise pollution and providing a physical buffer between moving traffic and pedestrians. Safety is further enhanced through the provision of well-marked crosswalks. Several of the crosswalks have pedestrian controlled signals. Those which do not, function effectively despite this deficiency. Automobile traffic generally slows along this segment of Broadway and will stop for crossing pedestrians. The abundance of pedestrian activity acts
as a self fulfilling prophecy. Pedestrian activity forces automobile traffic to slow, which in turn, creates a more appropriate pedestrian environment and attracts people.

Broadway's pedestrian environment is further enhanced by physical characteristics such as the limited distance between shopping opportunities and the abundance of sidewalk displays.

d) Views and Topography

Broadway's topography slopes gently. At its eastern edge, from Larch to Macdonald, there is a slight gradient creating a plateau beginning at the boundary of the study area, and a "bowl" which contains the core of the study area. Broadway remains flat until beyond the study area's western boundary, where it begins to slope gently upward at Alma street.

These features help create a "village" atmosphere. Buildings which abut the street block views to the north and south. Further, views to the east and west are obstructed by natural inclines. Thus, one can see only the mixed-used commercial district centred around Macdonald street. This intensifies a visitor's experience of the place.
III. Building Form

The character, height, and setback of buildings play an important role in defining an area or street. Consistency in building height, setback and design helps to visually tie a street together, creating an identifiable entity, rather than a collection of unrelated parts. Moreover, the proper appointment of corner buildings and open space between and in front of buildings is important. The degree to which a cohesive unit can be created, can be directly correlated to the overall success of a street.

Broadway's buildings have a consistent form. As was alluded to buildings which abut the street are predominantly retail establishments, personalized through variations in building materials, awning colours and design. Subtle variations in form and function add diversity and life to the street. One of Broadway's most remarkable attributes is its exceptional ground floor continuity.

The character of the street is further influenced by the sense of enclosure provided both by mature street trees and mixed-use buildings. Street enclosure is best achieved through building form, and is only marginally enhanced through the use of street trees. The strongest street walls are created when buildings
front the street directly, forming strong well-defined edges (Neale 1991, 38). However, effectively strong street walls can also be created by more recent podium developments. These developments generally have the first and sometimes second floors fronting the street, and subsequent stories stepped back to form a continuous wall at that point (Neale 1991, 38). Another recent type of development, terraced buildings, generally creates weaker street definition.

Broadway's street wall and resultant street enclosure is good. Despite some terraced projects the street wall is retained virtually throughout the study area. Street wall definition is best in the "core" area. Anomalies, such as the Petro Canada service station at the south west corner of Macdonald and Broadway, do exist. However, such breaks in the street wall, if only occasional, do not impede the overall effect.
GRANVILLE STREET SOUTH (Between 63rd and 71st Avenues) --

(See Figure Six)

1. History

Granville's history is very different from Broadway's. Unlike some of Vancouver's more traditional shopping streets, Granville South did not become a commercial centre until the late 1970's. Thus, its formative development pattern was dictated by the automobile.

Granville South is located within the neighbourhood of Marpole. This community was first settled in the 1860's; however, the original community was not centred around Granville street. Instead, Marpole was defined by the waterfront which housed sawmills, shingle mills, and gravel companies (Marpole Community Profile 1993, 1). By the 1930's Marpole was one of Vancouver's major industrial centres.

In its formative years Marpole was like a small town, virtually isolated from Vancouver by brush. This began changing by 1902 when the CPR constructed a railway to carry cannery employees to their jobs. Following this, growth was further enhanced by the development of a BC electric tram line in 1905 (Davis 1976, 90).
Rapid growth began in Marpole after World War II. "By 1950 more than 50 stores thrived along Hudson St. and Marine Dr., serving not only the area on the north side of the river, but (Richmond residents as well)" (Davis 1976, 90). This situation was transformed in 1957 with the opening of the Oak Street bridge. Business in Marpole waned as the community found itself divided by a major artery which caused both social and commercial dislocation. By the early 1960's the feel of the community had changed dramatically. This was further emphasized by the rezoning of lands to the south of 70th Avenue from single family housing to apartments, which drastically altered the community's age structure.

In 1975 the Arthur Laing Bridge opened to airport traffic, prompting a shift in commercial activity to Granville South. This signified the beginning of a hoped for turning point. City council initiated a planning process in order to address changes and help amend commercial deficiencies. Unfortunately, revitalization has not materialized to the extent first anticipated. Created as a product of the times, Granville South exemplifies a land use pattern that caters to the automobile. A massive roadway, an abundance of easily accessible surface parking lots and single land-use zoning characterize the area.
As was discussed earlier, these features are not conducive to a congenial urban/pedestrian environment.

2. Current Use and Activity

The role of Granville South is similar to Broadway's, albeit on a considerably smaller scale. Both streets function primarily as district shopping centres. However, Granville is currently not functioning favourably in this regard. Instead, Granville has evolved into what could be termed a convenience retail strip. This evolution was dictated by historical circumstances whereby Granville grew up as a major automobile artery at a time when planning for the automobile was paramount.

A limited selection of convenience stores now characterize Granville south. These enterprises generally survive by luring passing commuter traffic. Granville's character is further defined by its many general businesses, such as gas stations. These enterprises do not promote pedestrian activity along the street. Instead, they tend to create a "one stop" atmosphere urging people to arrive by automobile for one purpose, and spend little time comparison shopping or visiting.

Physical elements of the streetscape help to further define the area's character and feel. The width of Granville and the
traffic volumes inhibit the street's overall appeal. Moreover, the area is plagued by an over abundance of open space in the form of parking. Such features tend to diminish the urban appeal and cohesiveness of the street.

3. Future Trends

No future changes are expected on Granville. The street's convenience function will likely remain paramount. As limitations to urban/pedestrian environments result to a large degree from traffic volumes, any transportation developments that help to alleviate traffic congestion along this corridor will undoubtedly have a positive effect. Thus, things such as a future Sky Train link to Richmond, for example, could redirect the future of Granville's commercial area. However, as the exploration of such developments is beyond the scope of this thesis, it is being assumed that future conditions will remain virtually unchanged.

The current path of planning initiatives also signifies a retention of the status quo in Marpole. Planning initiatives, spawned in an attempt to revitalize Granville Street in the late 1970's and early 1980's, have been abandoned in favour of more
current planning issues. Thus, zoning changes are no longer expected for Granville Street.

4. Planning Policy

Currently, planning for the Marpole area is not a priority at City Hall. In the late 1970's and early 1980's attention was paid to Marpole and the Granville South commercial strip. Issues addressed at the time included the attractiveness of the corridor, commercial viability, prospects for expansion of the business area, zoning, and traffic concerns (Arbour 1979, iv).

Given the issues that were identified as important, planning policies were developed to address three specific Granville Street problems: image, business mix, and traffic. Zoning, and more specifically, the potential for creating a zone which encourages mixed residential uses within the commercial core was not explored. Zoning was discussed; however, such discussions generally focused on issues revolving around the infiltration of general business to the area's core. Because this is an important issue it is unfortunate that zoning discussions were not expanded to include a look at the potential for increased residential units. Had the planning initiatives not been abandoned, and had new zoning been created, Granville South may
have fared better as a lively commercial corridor. However, given the heavy traffic, it seems unlikely that Granville would have succeeded to the same extent as Broadway.

Planning policies were initiated by Vancouver City Planning staff. These initiatives were quickly endorsed by city council, and were received favourably by Marpole's merchants and residents. Unlike initiatives for Broadway, which focused on preserving the existing positive features of the street, the initiatives for Granville represented an ambitious attempt to create a new and dramatically enhanced commercial district. This is an important point as it quite closely replicates events transpiring at Marine Drive.

Discussions and study of the Granville South commercial strip culminated with the release of the Marpole Plan in October 1979. This plan emphasized the importance of keeping Granville South as Marpole's main shopping area, despite the heavy traffic volumes. Traffic problems were outlined as a concern; however, policies outlined no means to either ameliorate or accommodate the massive flux of commuter traffic. Further, the plan outlined ways to improve the area's image and promote it as the "gateway to Vancouver." The plan also defined and outlined ways to retain the street's core commercial area. This is an important concept,
and thus merits considerable attention. Much of Granville's limited success can be attributed to attempts made at strengthening the area's core.

5. Zoning

Granville's current zoning reflects Vancouver City Planner's abandonment of the street's revitalization, and thus remains virtually unchanged since the late 1970's. Granville's commercial area is currently comprised of two zones: C-2, and C-1. C-1 is usually reserved for small scale commercial enterprises such as corner stores, and thus emphasizes the inclusion of small scale commercial establishments. This zone does not allow for a wide range of goods and as such does not generally spawn comparison shopping. C-2 is a general commercial district zone which allows for a range of goods and services, as well as dwelling uses. It is the zoning schedule most commonly applied to Vancouver's urban commercial streets, and essentially functions quite well. Nonetheless, as was illustrated by the Broadway case study, schedules which emphasis certain desired characteristics can better accommodate an pedestrian environment.
The intent of these zones, as outlined by the Vancouver city Planning Department is as follows:

C-1 (small-scale commercial district)

The intent of this Schedule is to provide for small-scale convenience commercial establishments, catering typically to the needs of a local neighbourhood and consisting primarily of retail sales and certain limited service functions, and to provide for dwelling uses designed compatibly with commercial uses.

C-2 (general commercial district)

The intent of this Schedule is to provide for a wide range of goods and services, to maintain commercial activities and personal services that require central locations to serve large neighbourhoods, and to provide for dwelling uses designed compatibly with commercial uses.

The difference between these two zones and the ones discussed earlier relates to the handling of residential dwellings. As was outlined in the "Policy" section, less attention was paid on Granville Street to the promotion of mixed residential units. This is evidenced by the zoning schedules. Whereas the previously discussed C-2C zone encourages the creation of a
pedestrian orientation by *increasing* the area's residential component, the C-2 zone simply *provides* for dwelling uses which are deemed compatible. This is a meaningful distinction, and has considerable ramifications on the overall success of each commercial street.

The C-2 zone generally accommodates a wider range of potential uses than the C-2C zone. For example, C-2 allows the infiltration of both financial institutions and general offices. Moreover, it allows for services such as auction halls, fast food restaurants and motor vehicle repair shops. These uses do not encourage the creation of a pedestrian-oriented urban street.

Regulations for the C-2 zone are less restrictive than those for the C-2C zone. For example, frontage restrictions for commercial users are not applicable to the C-2 zone; however in the C-2C zone commercial users cannot have a frontage that exceeds 50 feet. F.S.R's are again less restrictive for the C-2 zone. In this zone the F.S.R can not exceed 3.00, except for purely residential uses that can not exceed 2.50. Unlike Broadway's zone, there are no restrictions on purely office uses. Additionally, purely residential uses are penalized less severely in the C-2 zoning schedule. Both these conditions make it easier
for developers to produce projects which break up the continuity of an urban commercial street.

6. Surroundings

Granville South is located within the community of Marpole. Marpole extends north from the North Arm of the Fraser River to 57th Avenue, and is bounded by Angus Drive to the west and Ontario Street to the east. The northern segment of the area is primarily comprised of single family residential homes, whereas the area between 70th Avenue and Marine Drive is made up almost exclusively of apartments. The area south of Marine Drive is dedicated to industrial uses. Additionally, there are two significant commercial areas within Marpole: Granville South between 63rd and 71st Streets, and Southwest Marine Drive between Granville and Oak Streets. Granville's surroundings closely replicate those found around Marine Drive in North Vancouver.

As is the case for Kitsilano, the Marpole neighbourhood has a number of primary zoning districts ranging from one-family dwellings to commercial and industrial zones. The most notable distinction between these two neighbourhoods is the percentage of land devoted to multi-family dwellings and industrial uses. While Kitsilano is almost void of any industrial activity, in
excess of 25 percent of the land area of Marpole is dedicated to this purpose. For multi-family zones the opposite holds true. In excess of 50 percent of Kitsilano is zoned either duplex or apartment, yet only a very small portion of Marpole is zoned multi-family. Thus, a large population base, like the one located proximate to Broadway, is not available to Granville South.

Further, as was outlined in the "Zoning" section, Granville's zoning does not encourage the development of higher density residences above commercial shops. Hence there are far fewer residential units that actually abut the street. This also results in a smaller "local" clientele for businesses to draw on.

Marpole's socioeconomic conditions are different from Kitsilano's. Although the area's percentage of young adults (those between the ages 20 - 39) has increased, it is still lower than Kitsilano. Assuming these people are among the most likely to patronize local establishments, this may be a factor in explaining the greater success of Broadway. Another significant trend, emerging in Marpole since the 1970's, has been an increase in the number of seniors. This group has expanded by 25 percent, and now makes up 17 percent of Marpole's population (See Table 3). As this segment of society is generally less mobile than
their younger counterparts, and is often constrained by fixed incomes, this too could help to explain the limited success of Granville.

Table 3: Marpole Age Structure

<table>
<thead>
<tr>
<th></th>
<th>Marpole</th>
<th>Vancouver</th>
</tr>
</thead>
<tbody>
<tr>
<td>seniors age 65+</td>
<td>17%</td>
<td>15%</td>
</tr>
<tr>
<td>residents age 40 to 64</td>
<td>24%</td>
<td>26%</td>
</tr>
<tr>
<td>residents age 20 to 39</td>
<td>42%</td>
<td>39%</td>
</tr>
<tr>
<td>children under age 19</td>
<td>17%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Source: Statistics Canada

Average household income for Marpole residents in 1986 was $31,585, 3% less than the city average of $32,403 and 37% less than the Kitsilano average of $43,198 (Marpole Community Profile 1993, 3).

The Granville South commercial strip is in competition with a number of commercial centres. Most important are the Oakridge Shopping Centre (a regional centre) and Kerrisdale (a district shopping centre). Both of these centres have market areas which confine the aerial extent of Marpole. Further, "the slightly higher population density in the Marpole market area is negated by the fact that there is virtually no population to the south of
the retail core, in the industrial area between Marine Drive and the river" (Arbour 1979, 9).

7. Movement Patterns

Granville Street is a major north-south arterial, performing an important role in Vancouver's transportation network. The roadway receives extremely high traffic volumes, attributed primarily to commuter flows. These flows involve both people who live in Richmond or other southern suburbs and work in Vancouver, and those residents of Vancouver and other northern suburbs who work at the airport or elsewhere in Richmond or to the south (Arbour 1979, 15). Additionally, Granville is affected by traffic travelling to the United States Border. As was alluded to, high traffic volumes could be alleviated if transit were improved from Vancouver to Richmond. Moreover, improving arterial streets, and limiting use of the Arthur Laing Bridge by Richmond commuters could help to further mitigate traffic congestion along Granville. Nonetheless, despite these potential developments, Granville's traffic will undoubtedly remain heavy.

Traffic volumes on Granville Street south of 63rd Avenue have increased by 39% over the last ten years. On the other hand, city wide traffic increased by 34% over the same time period, and
Kitsilano traffic increased by only 19% (Marpole Community Profile 1993, 4).

Traffic counts, taken on a Monday in February of 1992 attest to high traffic volumes, and illustrate a pattern of commuter flows (See Table 4). As is the case for Broadway, Granville is subject to substantial diurnal traffic flows. However, unlike the Broadway situation, this acts as a detriment rather than an asset. Contrary to the assumption that increased traffic stimulates business, evidence suggests that once traffic volumes reach a certain point they generally lead to reductions in retail business. The resultant congestion and limitations on turns and parking force shoppers to patronize more easily accessible locations.
Granville is both a truck and transit route. Field analysis suggests that benefits of frequent bus service may be outweighed by the large volumes of truck traffic and resultant air and noise pollution. Overall, disbenefits of the corridor's high traffic volumes exceed the marginal benefits offered to merchants in the form of high exposure and good service by transit.

8. Design Considerations

I. Use and Activity

a) Extent of Diversity

Granville is more diverse than Broadway. Although it can be argued that diversity adds vitality to a street, the opposite is
also true. Granville suffers from a lack of cohesion both in function and form. Each side of the street performs a distinct function, and operates almost as a separate entity. Pedestrians tend not to traverse the roadway to visit different shops as they do along Broadway.

b) Residential Units

Very few mixed residential units abut Granville South's commercial district. Additional units could potentially increase the area's local clientele, and stimulate commercial business. However, given the high traffic volumes this seems unlikely. Nonetheless, some of the newer developments (such as the building located at west 66th Avenue) have a mix of commercial and residential uses.

c) Parking

Curbside parking has been stripped along Granville Street during peak hours (7-9am and 3-6pm). Given the high traffic volumes this appears to be a reasonable solution. Evidence suggests that total removal of curbside parking can be very detrimental to local merchants. Once parking has been stripped it becomes virtually impossible to reintroduce. Nonetheless,
even the removal of peak hour parking has adverse effects on the functioning of a commercial street. The most successful streets remain those where traffic volumes are low enough to sustain curbside parking.

d) Nodes

The Granville Street commercial area is considerably shorter than Broadway's. At Granville South, commercial activity extends for only seven blocks, whereas at West Broadway there is commercial activity for ten blocks. Further, save a two block interruption of multiple dwellings between Larch and Vine Streets, the Broadway commercial corridor actually extends for more than forty blocks between Alma and Fraser Streets. This contrasts sharply with Granville Street where the seven block commercial strip exists in almost complete isolation.

Given the above circumstance, there is no identifiable node for the Granville South commercial area. Essentially the area functions as a unit, defined by a barely observable core/periphery pattern.
II. Street Level

a) Street Trees, Street Furniture, Landscaping and Lighting

Street trees extend from 70th Avenue north to 63rd Avenue. They help mitigate the wide open feel that results from the extreme width of the corridor. There is a notable lack of benches and other street furniture on Granville South. Furthermore, street lighting is strictly utilitarian, and does nothing to improve overall ambiance of the area.

b) General Commercial/Office Uses

The Granville study area suffers from an overabundance of general commercial uses such as service stations and grocery stores. The area's Safeway, as an example, has severely broken up the corridor, both visually and functionally, through the positioning of a large parking lot fronting the street. An abundance of "mini malls", housing convenience stores and the like, have had a similar effect.

c) Pedestrian Environment

The pedestrian environment at Granville South is more threatening than that on West Broadway. This results primarily from high traffic volumes. Pedestrian crossings are not as well
marked, are not pedestrian controlled, and are longer (due to the width of the street). Moreover, vehicular traffic generally travels faster along Granville than Broadway. As a consequence, few pedestrians bother to cross the street.

Some of the local businesses have awnings and sidewalk displays. Nevertheless, these features are less abundant than on Broadway.

d) Views and Topography

Granville South's commercial district slopes gently to the south affording views of the Richmond area. Looking north, an observer has an endless view up the inclining Street. Although not a significant feature, the "open" feel which results from the area's topography may be a hindrance to its overall appeal. Because an observer can see "endless" vistas both to the north and south, he/she feels no sense of enclosure. This is significant, as visual enclosure is a notable urban characteristic.
III. Building Form

The collection of buildings along Granville South do not create a strong street wall. As was discussed, a strong street wall results when buildings have similar heights and setbacks. Granville fails in this regard due to an over abundance of surface parking. This problem is perpetuated by the vast number of single story buildings, and the more recent addition of "pedestal" style buildings.

Because of the corridor's excessive width, it seems prudent to introduce taller buildings to the street. Such buildings could have the effect of bringing the street's edges closer together, and thus add to the area's sense of enclosure and urban appeal.

CONCLUSIONS

This chapter illuminates numerous aspects concerning the functioning of urban mixed-use commercial streets. Much of the knowledge gained through the study of Broadway and Granville Street can be utilized when attempting to create a "formula for success" for Marine Drive in North Vancouver. Nevertheless, as these case studies also demonstrate, matchless circumstances create both advantages and disadvantages for urban streets. These prevailing conditions are difficult to alter. Hence,
although the "creation" of successful mixed-use commercial streets is not completely out of the hands of Planners, they must rely heavily on circumstances beyond their control. Properly directed planning initiatives can have an effect. However, as the Granville case study illustrates, Planners are forced to work within limited confines, sometimes to no avail.

### Components necessary for success

Certain components are necessary for the success of commercial streets, while others, although important, play a secondary role. I have compiled a brief list of things which are required in order for a commercial street to succeed. This list is important, and can be used as a checklist to determine what is present and what is lacking along Marine Drive. More important, however, are the questions that such a list begs. For example: how are these conditions achieved? And, can these conditions be achieved for Marine Drive? These questions form the crux of this inquiry.
The Requirements of a Successful Mixed-use Commercial Street are:

1. Sufficient Residential Density
2. Continuity in Street Level Retail Activity
3. On Street Parking
4. Merchant and Community Involvement and Cooperation
5. An Identifiable Node of Activity
6. Pleasant and lively Atmosphere
7. Transit Service
8. Identity

Case Study Findings

Outlined below are the salient points from preceding sections. Given the thrust of this paper, those points that can be applied to the "recreation" of Marine Drive are outlined.

a) History

One of the most important ingredients for success relates to the time of a street's development. Those corridors, such as Broadway, which developed before the advent of the automobile generally exemplify a more intense and authentic mixed-use pattern. Because these streets developed as a spine of activity for the local neighbourhood, residential development generally
surrounds the corridor, giving it a substantial local consumer base. Furthermore, they are generally void of the vast surface parking lots which characterize more recently developed corridors.

Developments in the city's transportation network also play a significant role in the current functioning of a street. For example, development of the Arthur Lang bridge created an undesirable condition for Granville Street by generating massive volumes of through traffic. Save the announcement of an equally momentous development, (for example a Sky Train link to Richmond) it is unlikely Granville South will become a pedestrian friendly commercial corridor.

b) Current Use

The current role of an urban street in the city-wide context plays an important part in its success. Streets, such as Granville, which currently function as integral vehicular corridors are not likely candidates for a traditional shopping street. High traffic volumes render these corridors threatening and unattractive.

The current success of coffee shops, especially along Broadway, exemplifies the importance of such establishments.
People require places to meet and socialize. Although only a small design consideration, the effects of such establishments can not be underestimated. They have important ramifications on the overall functioning of a street. The absence of such establishments along Granville diminishes its overall appeal.

c) Future Trends

The case studies illustrate the enormous momentum of current land use patterns. Past patterns dictate future trends. As was exemplified by the Granville case study, even several years of intensive work will not necessarily recreate a successful mixed-use commercial street.

d) Planning Policies

Planning Policies which preserve and reinforce existing characteristics are very effective. The creation of Broadway's two distinct zones, for example, retained and enhanced the street's existing character by effectively encouraging residential development, stopping the proliferation of general businesses, and emphasizing a core/periphery pattern.

Nevertheless, although these policies worked for Broadway, they may prove less effective when applied to different streets.
Policies concerning mixed-use commercial thoroughfares are not necessarily interchangeable. Broadway's success appears to have acted like a springboard for Granville's development. This is unfortunate. The policies for Broadway developed over many years as a result of proactive efforts by Merchants, members of the community and Planners. They were designed to perpetuate a specific role for Broadway, illuminated by initial studies as most appropriate. On the other hand, policies for Granville emerged as the result of efforts by City Planners. They were created in a relatively short time frame as a reaction to perceived shortcomings of the street, and borrow heavily from the Broadway experience. History suggests it may have been more appropriate to begin by studying Granville's role in the city context, paying close attention to the street's particular circumstance.

e) Zoning

The zoning created for Broadway has proven successful. The application of two zones is appropriate for mixed-use commercial corridors. Such a scheme creates a finer texture, and allows more responsive results. "Blanket" zones are less responsive to the nuances of different commercial corridors. Although

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obviously more attractive from an administrative point of view, blanket zones should be avoided, as they do not allow for the creation of identifiable nodes of activity.

Core area zones should encourage the inclusion of several different uses. However, it should also stipulate the exclusion of general commercial business. Witness the success of Broadway's core area. This condition would not exist if general commercial establishments were allowed to proliferate. As the impact of such establishments is less severe in areas outside the core, the inclusion of this type of activity is acceptable in the peripheral zone. Allowing general business in the outer zone often aids in the overall draw of an urban commercial street

f) Surroundings

The surroundings of an urban commercial corridor dictate success more than any other variable. The most important element of a street's surroundings is the population base. In order for mixed-use commercial streets to succeed, there must be a sufficient population base within a reasonable distance.

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1 General businesses include things such as large Supermarkets, Banks, and Service Stations. Although not appropriate in the core area, general business can help to draw consumers from farther afield.
Although no quantitative analysis were done in this regard, the case studies suggest two things concerning the necessary size and proximity of a population base.

First, as illustrated by the success of Broadway, sizable multi family areas located nearby create an unparalleled advantage. Anomalous pockets of high density residential development may not suffice. This is evidenced by the situation at Granville Street where the effects of having a high density district directly to the south are negated by the fact that the residual of the neighbourhood is comprised of either single family or industrial districts.

Second, with regards to proximity, Broadway's situation suggests that a sizable population base need not be located adjacent to the street, but should be located within walking distance -- that being approximately eight blocks. Further, the Broadway study illustrates the importance of residential units located on the corridor. These residences add not only an easily accessible population base, but much needed diurnal activity.

Socio-economic conditions also play a role in the overall success of a street. Age structure and disposable income are the most important variables. A neighbourhood with a predominance of young adults and high disposable incomes is an asset.
Nonetheless, a mix of inhabitants is deemed desirable. Location in relation to employment centres and competing shopping centres is significant. West Broadway's situation is unique as it is located adjacent to the second most important commercial centre in Greater Vancouver, the Central Broadway Corridor. This relationship creates peerless advantages for west Broadway. As the Granville Street study exemplifies, this condition is not matched through high visibility. Although high volumes of commuter traffic utilize Granville Street, only a small percentage stop.

The location of commercial streets in relation to large shopping centres is important. Some of Broadway's success (and the success of other west side shopping streets such as 4th Ave, 10th Ave, and Dunbar) can be attributed to the lack of shopping centres located within this segment of the city. Moreover, the limited success of Granville can be partially attributed to competition from Oakridge Shopping Centre. Nonetheless, shopping streets such as Kerrisdale (also located within the "shadow" of Oakridge) have proven successful. Hence, although a detriment, competition from shopping centres does not arrest the potential for success.
g) Movement Patterns

Integral to a street's potential success is the volume of traffic which it receives. High traffic volumes are detrimental for two main reasons. First, high volumes necessitate the removal of curbside parking. This makes it more difficult for patrons to stop and shop, and eliminates an essential physical barrier between pedestrians and commuter flows. Second, high volumes make the street threatening and difficult to cross. High volume corridors do offer one benefit to mixed commercial streets: public transit. Major arterials form an integral part of Vancouver's transit network. Points along a major arterial, such as Granville, are easily accessible to transit users. Nonetheless, it can be convincingly argued that shopping opportunities need not be located on major thoroughfares, as streets which cross arterials are just as easily accessed by transit users.

h) Design

Cohesiveness is important in both form and function. Nonetheless, textural variations are integral to a streets success. Long facades and single use buildings create monotony. Surface parking, general office/commercial uses at grade level
and excessive building setbacks should be avoided, especially in the "core area." A continuous wall of commercial establishments at grade, with residential uses on the upper floors has proven most successful. Essentially, these design characteristics define west Broadway.

Beautyfication efforts, in the form of street trees, street furniture, and the like, are important. However, they alone cannot revitalize a street which is not functioning properly.

How Do We Achieve Desired Conditions?

Evidence suggests that the best way to "create" a successful mixed-use commercial street is to strengthen existing favourable conditions on those streets which are currently functioning well. This is a rather dismal revelation. Such a finding suggests that current land use patterns are a fixed condition we should expect to endure indefinitely. Obviously this is not the case. Nonetheless, this study convincingly demonstrates a distinction between the results obtained through evolution verses promotion. More specifically, it illustrates the poignant power of the "naturally occurring" evolutionary process. Historical circumstances often dictate what the future will hold. Hence,
when studying where to proceed with streets such as Marine Drive one must begin by gaining an understanding of the forces involved in the street's evolution. Knowing what shaped the corridor will better allow one to build on the "natural" elements which best lend themselves to manipulation. Following this, it is important determine how successfully one can apply the various techniques that aided in the "creation" of other successful commercial corridors.
CHAPTER FOUR: RECREATING MARINE DRIVE

INTRODUCTION

Case study findings suggest that not all transportation corridors are appropriate pedestrian-oriented shopping precincts. Nevertheless, given the desirability of such a condition, and the success of urban commercial corridors such as Broadway, studying the potential along Marine Drive is valid. This chapter will explore Marine Drive's future.

THE MARINE DRIVE STUDY

The Marine Drive inquiry will begin with a look at existing characteristics. Background information will help explain how the current Marine Drive condition came to be, and why it hasn't evolved into pedestrian-oriented commercial street. Next, the study will explore the potential for future development from a developer's perspective. Last, utilizing the above information, the study will explore specific issues regarding revitalization. This discussion will illuminate how the successful revitalization actually requires an abandonment of efforts directed specifically at reshaping the Marine Drive corridor. Instead, successful revitalization efforts must recognize Marine Drive as an integral
component of an urban system centred around the Pemberton Avenue Marine Drive intersection, and extending south along Pemberton. Further, one must recognize the limited scale of potential success. Specific conditions dictate that the Lower Capilano neighbourhood may not be an appropriate location for pedestrian-oriented commercial corridor. Hence, any revitalization efforts must be viewed as tools to guide future development. Conditions at and near Marine Drive will change slowly. Chapter five will outline the policy implications of these findings.
MARINE DRIVE (Between McKay Avenue and Capilano Road) --

(See Figure Seven)

1. History

In order to fully understand Marine Drive one must first look at the development of the North Shore. Marine Drive's current pattern is dictated by its role in the North Shore context.

The first North Shore settlement was Moodyville at what is now the base of Lonsdale Avenue. Development generally expanded concentriclly from this waterfront saw mill. By 1893 the town site that existed more or less defined the present Lower Lonsdale area (Heritage Committee 1983, A3). Early developments quickly entrenched a pattern on the North Shore. With Lonsdale as the area's hub, transportation routes began to radiate outward. A ferry service was offered to Vancouver. By 1906 tram lines extended up Lonsdale, up Grand Boulevard, and west toward Marine Drive -- then called Robson Street (Davis 1990, 37). By 1912 the Capilano Street Car Line had begun to stimulate residential development in the area surrounding Marine Drive, particularly the Pemberton Heights and Lower Capilano neighbourhoods.
Figure 7: Marine Drive Site and Situation Map
By 1909 West Vancouver had also begun to grow, and a private ferry service was developed to run between Vancouver and Ambleside. Thus, Marine Drive was becoming established as a link between the two developing communities. In 1925, with the opening of the Second Narrows bridge, Marine Drive developed a tourist orientation (NVD files). Tea houses, BBQ's and vacation cabins became the norm. This function is now generally confined to the western portion of Marine Drive at Capilano Road.

In November 1938 the Lions Gate bridge opened (Davis 1990, 75). Marine Drive quickly became a major traffic artery. Shortly thereafter the road was improved and developed into an integral bus route.

As Marine Drive was being established as the "main link" between Lonsdale and Ambleside the automobile was becoming paramount. Thus, it comes as no surprise that the corridor has naturally developed as an auto-oriented commercial strip.

Marine Drive's pattern was further emphasized by the development of West Vancouver's Park Royal Shopping centre in the 1950's, and later, Capilano Mall in the City of North Vancouver. The continued development of high density residential uses at both Ambleside and Lonsdale has entrenched the existing pattern, enabling Marine Drive's historic orientation as an auto-oriented commercial strip.
strip to intensify. In the 1970's and 1980's Marine Drive continued to provide space for land-extensive and auto oriented uses. Now, in the 1990's, North Vancouver District Planners are questioning the legitimacy of this role.

2. Current Use and Activity

Marine Drive continues to function as an auto-oriented commercial strip. It is best classed as a "district commercial urban arterial." The majority of motorists generally use Marine Drive as a transportation corridor. Commercial enterprises that require large tracts of land and high visibility are the primary land users. Large surface parking lots, heavy traffic volumes, and a lack of cohesion are characteristic of the corridor, making it unpleasant and unattractive for pedestrians. Moreover, the street suffers from an overall lack of visual appeal. It has a confusing and uncoordinated array of signs, street furniture and landscaping. Nonetheless, the corridor plays an indispensable role as a commercial strip in the North Shore context (See Figure Eight).
Figure 8: Marine Drive; A District Commercial Artery

Marine Drive looking East from Capilano Road

Automobile oriented establishments located along Marine Drive
3. Future Trends

The future of the Marine Drive corridor depends largely on local transportation developments and the treatment of surrounding areas. If a new "Low Level Road" were created to help alleviate Marine Drive traffic, and/or proximate higher density residential developments were created, portions of the corridor likely would develop as more intense mixed-use pedestrian precincts over time. Nevertheless, commercial forecasts suggest that even under high population growth scenarios there is little potential for retail or service development along Marine Drive during the next twenty years (Coriolis 1988, 16).

The most likely prospect for the Marine Drive corridor is an overall retention of the status quo. This could include some mixed-use residential developments and an intensification of the pedestrian environment in particular areas under specific conditions.

2 This will be discussed in more detail in a later section.
4. Planning Policy

Planning policies for Marine Drive have long recognized the street's orientation toward land-extensive automobile-oriented commercial uses, and have generally prescribed a retention of this condition. Nonetheless, this recognition is coupled with an overriding interest in "revitalizing," or at least "intensifying" and "beautifying" the corridor. Paradoxically, notions of revitalization have traditionally been plagued by neglect. The long standing interests in revitalization juxtapose the initiation of policies that turn their backs on the Marine Drive corridor in favour of other commercial areas. This condition exists partly because many of Marine Drive's perceived deficiencies result from arbitrary Municipal boundaries.

Policies developed to address the street's deficiencies have characteristically concentrated on physical aspects, attempting to repair Marine Drive's visual image. It is important to note that, despite extensive involvement by members of the Lower Capilano neighbourhoods, most policies have been initiated by professional planners. This is quite different from the situation at West Broadway where initiatives were founded by Merchants and Community members.
A 1961 "Marine Drive and Lower Pemberton" study illustrates an early recognition of Marine Drive's character. The study states that the present image cannot be transformed, and the corridor will continue to grow and expand in the direction of automobile uses (iv). It emphasizes the fact that Marine Drive cannot compete with Lonsdale Avenue or Park Royal, and suggests that it complement these functions via an auto-orientation, thus "tying" the two centres together. More recent commercial studies echo these findings -- see "Marine Drive Corridor Study" (1982), and the Coriolis report (1988). The 1961 study also explains how Marine Drive's purpose is very useful, and should be encouraged and improved in order to better serve the public. Again, more recent studies echo these sentiments. However, in the last decade revitalization campaigns have become more pointed. By the 1980's studies were being performed to "determine the future of Marine Drive." These explored ways to guide future growth and improve the corridor's visual appearance. These studies generally prescribed improvements to physical elements of the street.

Despite recent interest in the corridor, Marine Drive has historically suffered from complacency and neglect. Because its function was deemed unchangeable and appropriate, policies have
generally concentrated on the development or revitalization of other North Vancouver District precincts. This is not necessarily bad, as more intensive efforts would have likely proven fruitless. It is worthy of mention as it helps explain the current situation.

In the early 1980's North Vancouver District discerned that a commercial activity "imbalance" existed on the North Shore. As was alluded to, this "imbalance" exists only as a product of Municipal Boundaries. Municipal boundaries do not match the economic or trade area boundaries on the North Shore (Coriolis 1988, 3). Thus, although in market terms the North Shore's commercial cores already exist in a "normal" pattern, adequately serving the North Shore population, in Municipal terms North Vancouver District is deficient in commercial space. This results because the three commercial centres Park Royal, Capilano Mall, and Lonsdale Avenue/Quay, are located within the District of West Vancouver and the City of North Vancouver. These commercial centres serve North Vancouver District residents well, yet District statistics illustrate a deficient amount of commercial space per capita. Creating another commercial centre along Marine Drive ignores market realities and is unrealistic.
Nonetheless, District authorities found it prudent to act on this perceived reality. Although this condition may be false in market terms, it creates a real problem in terms of commercial tax collection. In an attempt to correct the commercial "deficiency," and more importantly increase the District's commercial tax base, a 1982 study was commissioned to determine ways of increasing the District's commercial space. This study suggested that efforts were better concentrated on the area east of the Seymour River, as it was experiencing the most rapid growth. Thus, planning efforts were once again redirected, and Marine Drive retained its status quo.

The creation of "Town Centres" in the late 1970's and early 1980's also had an effect on the direction of Marine Drive. This policy initiative prompted fairly intense development at Lower Lonsdale, among other places, and thus made it virtually impossible to establish a major concentration of activities along Marine Drive.

The amount and type of commercial activity along Marine Drive is generally the product of market forces. The corridor's present form results from its location relative to North Shore populations, the area's geography, and transportation and trading patterns. It is not the result of restrictive policies. Policy,
thus far, has supported the status quo, neither hindering nor advancing development. Thus, any full scale transformation at this point would be breaking new ground and would require unprecedented policy initiatives. Recent amendments to the Official Community Plan attest to an emerging divergence between reality and the current plan. It has come time to review current policies and make changes where required.

5. Zoning

Zoning of 1928 has been largely responsible for creating conditions along Marine Drive. For a period of twenty-four years development along the corridor was directed by the 1928 interim zoning by-law. Titled a Business "A" district, this zoning governed a shallow "ribbon" form of commercial development. In 1951 a by-law was passed which eliminated much of North Vancouver's ribbon commercial zoning except along Marine Drive (Planning and Property, August, 1961). The corridor has retained this form of development.

By the mid 1980's an increase in the rate and scale of development prompted the designation of Marine Drive as a development permit area. This was a legitimate approach, and has afforded Planners greater discretion. It has not, however,
helped to add more pedestrian activity to the corridor. Despite the fact that 1983 zoning allowed for residential uses above commercial, little of this sort of development exists. This results because the implemented zoning did not deal enough with noise pollution and other related requirements of mixed-use forms of development.

With the exception of the Capilano Triangle, which is designated a C-4 Tourist Commercial Zone, Marine Drive is comprised of the general commercial zones C-2 and C-3. These zones are, as the title states, "general" commercial zones. Thus, unlike the C-2C and C-2C1 zones developed for Broadway, they do not "encourage the creation of a pedestrian-oriented district," nor do they "encourage the creation of a district shopping area by increasing the residential component and limiting the amount of office space" (C-2C zoning Schedule).

This is not to suggest that carbon copies of Broadway's C-2C and C-2C1 zones be established along Marine Drive. As was illuminated by the case studies, blindly transferring policies that have proven successful in one particular situation to another, each with unique circumstances, may not create anticipated results. In fact, evidence suggests that currently Marine Drive might not be an appropriate corridor for Vancouver's
C-2C and C-2C1 zones. Given the legitimacy of its current use in the North Shore context, the prospects of retaining the status quo in the near future, and the density of surrounding residential areas, transformations at a large scale are currently unrealistic. Zoning changes which encourage mixed-use residential developments should be encouraged in specific areas, specifically on or near Pemberton Avenue. Once a node of activity has been established (which could take decades) then a transformation of larger segments of Marine Drive can begin.

In order to facilitate the future conversion of larger segments of the corridor, the current general zoning regulations must be made more detailed and specific. In particular, these zoning regulations must encourage the mixing of uses, especially residential and commercial. Currently the OCP stipulates that the corridor should illustrate consistency in function and design (1984, 3-1). This is unfortunate. As the Broadway case study exemplifies, a mixing of functions is desirable. District Planners should begin to explore zoning options which stipulate physical characteristics rather than use. This type of zoning, commonly referred to as impact or performance zoning, is undoubtedly part of Marine Drive's "solution."
6. Surroundings

Marine Drive is surrounded primarily by single family residential precincts as well as a light industrial area. These surroundings echo those of Granville Street. Thus, Marine Drive suffers many of the same problems (See Figure Nine).

The Marine Drive Corridor is located within the "Lower Capilano" community. The boundaries of this area extend roughly from the Upper Levels Highway to the waterfront, and from McKay Avenue to the Capilano River. This area is a political manifestation rather than a geographic one. The east and west boundaries are defined by Municipal borders and the northern boundary by a roadway.

Marine Drive is surrounded by single family residential precincts. The most proximate neighbourhoods are Norgate, located to the south; Lower Capilano, adjacent and to the north; Pemberton Heights beyond this to the north; and Glenaire to the northwest. Norgate and Pemberton Heights are the largest and most stable of these neighbourhoods. Norgate is generally comprised of moderately priced "wartime" houses, and Pemberton Heights of modest, yet more expensive, homes. Lower Capilano is experiencing some pressures and has begun to change character. Recently, some larger homes have been introduced on smaller lots.
Nonetheless, house prices in Lower Capilano can still be considered moderate. Glenaire is a small enclave of newer, higher priced homes (Marine Drive OCP 1984, 6-1). The future of the Marine Drive Corridor depends largely on the treatment of these proximate residential neighbourhoods. Some areas must accommodate higher densities in order to increase the potential for active, pedestrian-oriented commercial corridor.

Beyond Norgate to the south, and in the southeastern portion of Lower Capilano (primarily east of Pemberton Avenue) there are a broad range of uses including commercial, storage and warehousing, and light industrial. This area, loosely defined as the Pemberton/Welch industrial area, is one of six main light industrial areas on the North Shore. The area is currently underdeveloped, housing a considerable amount of land extensive uses such as rail yards, warehousing, lumberyards and a transit station (Coriolis 1988, 8).
Figure 9: Marine Drive Surroundings
The Lower Capilano neighbourhood is characterized by a greater than average number of senior citizens and a smaller than average number of children (See Table 5). Notice the similarities between the age structure of Lower Capilano and Granville. As was alluded to in the Granville case study, this type of neighbourhood age structure may be a detriment to the functioning of a lively commercial corridor.

Table 5: Lower Capilano Age Structure

<table>
<thead>
<tr>
<th></th>
<th>Lower Capilano</th>
<th>North Vancouver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Age (1991)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>seniors age 65+</td>
<td>17%</td>
<td>11%</td>
</tr>
<tr>
<td>residents age 40 to 64</td>
<td>32%</td>
<td>31%</td>
</tr>
<tr>
<td>residents age 20 to 39</td>
<td>33%</td>
<td>34%</td>
</tr>
<tr>
<td>children under age 19</td>
<td>19%</td>
<td>24%</td>
</tr>
</tbody>
</table>

Source: Statistics Canada, NVD

Annual median income for employed residents of Lower Capilano was $23,300 per person in 1990 (NVD Quick Facts 1993). This represents a twenty percent increase since 1985, however, it is lower than median incomes for the North Shore as a whole.
7. Movement Patterns

Marine Drive is a major east west arterial on the North Shore. As defined by the District of North Vancouver, a "major arterial" is any roadway that carries large volumes of all types of traffic moving at medium to high speeds with access to abutting properties being a second function (ND Lea 1990, 9).

Marine Drive, east of Capilano Road, has been identified as an area of concern from a traffic impact stand point. This results primarily because the corridor is heavily utilized as a commuter route. People who live in central North Shore neighbourhoods and commute to Vancouver, or more western North Shore destinations such as Park Royal, use the corridor extensively. Further, commuters travelling east to central North Shore locations such as Capilano Mall and Lonsdale Avenue/Quay use the corridor. This raises concern because Marine Drive is currently at its ultimate development within the available right of way (ND Lea 1988, 5). Thus, the impact of increased traffic volumes can not be handled by street widening or upgrading. More

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3 Park Royal is the major generator of trips from North Vancouver to West Vancouver. Other commercial areas generate a small number of trips in comparison (ND Lea 1988, 22).
sophisticated traffic management techniques will be required in the future to optimize congestion conditions.

Two transportation developments are directly tied to the future of Marine Drive's traffic volumes -- the development of a new Burrard Inlet crossing, and a new "Low Level Road." Despite the significance of these developments they are beyond the scope of this thesis and will not be discussed in detail. However, I will briefly alert the reader to potential outcomes.

The outcome of one of the two developments is relatively easy to predict. Recent events indicate that the Lions Gate crossing will be refurbished or recreated within the next five years. It appears that a future crossing will likely utilize the existing right of way -- either by rebuilding or replacing the existing bridge. This suggests that Marine Drive traffic volumes, generated by bridge destined traffic, will remain constant or increase as a function of local growth.

The second development involves a political quandary whose outcome is currently uncertain. The creation of a "Low Level Road" in North Vancouver could significantly decrease commuter traffic along Marine Drive. The prospects of creating a low level road, utilizing a right of way on Native land, have been visited by local planners numerous times. If such a development
were to proceed, the role of Marine Drive as a commuter corridor would change dramatically. However, it seems unlikely that a low level road will be created in the next five to ten years.

There is no way of knowing the future of the Lions Gate Bridge or Low Level Road. Nonetheless, it appears, at least in the near future, that Marine Drive's commuter traffic volumes will remain constant or increase. Thus, any recommendations regarding the "revitalization" of Marine Drive should assume this as a given parameter.

As was outlined, Marine Drive is characterized by commuter flows. It is very important to make a distinction between the pattern and overall volume of traffic along this corridor. Traffic counts taken along Marine Drive indicate a reduction in overall traffic volumes, and modest twenty-four hour traffic counts. Twenty-four hour volume counts for Marine Drive are roughly comparable to those found on West Broadway -- where traffic volumes have not been a detriment to development. However, it is hypothesized that traffic volumes, and resultant traffic congestion, is hindering development potential along Marine Drive. This results because Marine Drive receives substantial peak hour commuter traffic, and lacks in continual diurnal flows (See Table 6). Also, given market conditions and
geography, Marine Drive serves as a conduit for commuters to get to other destinations. This is precisely the case along Granville Street, yet to a much larger degree -- traffic volumes are approximately 45% lower on Marine Drive.
### Table 6: Marine Drive Traffic Counts

<table>
<thead>
<tr>
<th></th>
<th>Thursday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>East Bound</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7am - 9am</td>
<td>1200</td>
<td>535</td>
</tr>
<tr>
<td>4pm - 6pm</td>
<td>2992</td>
<td>2741</td>
</tr>
<tr>
<td>7am - 6pm</td>
<td>8769</td>
<td>7858</td>
</tr>
<tr>
<td>24 hours</td>
<td>12550</td>
<td>11322</td>
</tr>
<tr>
<td><strong>West Bound</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7am - 9am</td>
<td>2001</td>
<td>768</td>
</tr>
<tr>
<td>4pm - 6pm</td>
<td>2492</td>
<td>2368</td>
</tr>
<tr>
<td>7am - 6pm</td>
<td>9307</td>
<td>8124</td>
</tr>
<tr>
<td>24 hours</td>
<td>12194</td>
<td>11002</td>
</tr>
</tbody>
</table>

Source: Traffic and Eng. NVD
Note: Traffic counts are for the week of January 19, 1994.

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### 8. Design Considerations

#### I. Use and Activity

a) Extent of Diversity

Marine Drive does not function as a cohesive unit. Marine Drive suffers from a lack of cohesion in function, and more importantly form. Evidence suggests that diversity in street function is an asset. However, extensive diversity in physical form makes a street seem chaotic. Such is the case for Marine Drive. The corridor is characterized by what the District terms a "diversified wall/opening pattern" (NVD, 1984). This pattern
is defined by irregular setbacks and an uncoordinated sequence of buildings, courtyards, and parking lots.

b) Residential Units

Marine Drive has very few residential units abutting the street. Currently there are perhaps four residential addresses on the corridor. Because this number is marginal compared to the number of other uses on the street -- furniture and home improvement stores number twenty two (NVD 1984), the street appears to be completely devoid of residential activity. Policies and regulations have permitted the development of mixed residential/commercial projects for some time. However, developers have not taken the opportunity.

c) Parking

Some small segments of on street parking still exist along Marine Drive. Specifically, parking is found on the south side of the street between McKay and Lloyd Avenues, and again between McGuire and Bowser Avenues. Peak time parking restrictions for these areas do exist. Parking has been removed from the remainder of the street to accommodate left hand turn bays. The removal of curbside parking was not generally intended to
facilitate "through traffic." Instead, the replacement of curbside parking with turning bays was intended to increase the amount of "destination" traffic by allowing motorists to more easily access various mini-malls.

d) Nodes

Two nodes of activity exist along the Marine Drive corridor at Capilano Road, and again at Pemberton Avenue. The Capilano node does not generally house intensive land uses. Instead, it is defined as a node due to its dominant tourism orientation, the significance of the Capilano/Marine Drive intersection, and the presence of International Plaza Apartments. The Pemberton node, on the other hand, is recognized as a node because of the intensity of retail/services offered at this location. Located on the north side of Marine Drive at Pemberton Avenue are the "Modern Image Plaza," and the "Pemberton Plaza." These two plazas house twenty-eight different retail or office establishments ranging from Save-On Foods to small medical and dental clinics.
II Street Level

a) Street Trees, Street Furniture, Landscaping and Lighting

Marine Drive has street trees flanking the roadway for most of its eleven blocks. However, it is not well endowed by street furniture such as benches, garbage cans, and bike lock ups. Street lighting is strictly utilitarian. The corridor is generally deficient in landscaping. Small planters and gardens do exist in front of some mini malls and parking lots. However, they are not coordinated and appear disjointed. Further, some blocks have virtually no roadside landscaping. Marine Drive could benefit from a beautification scheme which addressed these deficiencies.

b) General Commercial

There is an abundance of general commercial users located along the Marine Drive corridor. Many argue that Marine Drive is plagued by the "Kingsway syndrome" -- implying the corridor is comprised almost exclusively of automobile dealerships and repair shops. While this is an obvious exaggeration, Marine Drive does exemplify a pattern similar to Kingsway's. Approximately eighty of the total one hundred and fifty business located along Marine Drive are either general commercial or office uses. Of these at
least twenty three are automobile oriented establishments (NVD
1984).

c) Pedestrian Environment

Development along Marine Drive never contemplated the
Pedestrian. Any developments which aid the pedestrian
environment appear to be the result of engineering standards and
building codes, rather than a conscious attempt to create a
pedestrian friendly environment.

Pedestrian sidewalks run continually along both sides of
Marine Drive. Nonetheless, the pedestrian environment is not
accommodating. The reasons for this are numerous. First, it is
a visually unattractive commercial strip. Second, large surface
parking lots create a disjointed pattern, forcing patrons to
tavel excessive distances between commercial establishments.
Third, pedestrian crosswalks are generally not well marked, not
pedestrian controlled, and are inconveniently located.
Furthermore, due to the width of the roadway, crosswalks are
long.
d) Views and Topography

The Marine Drive corridor is flat. Nonetheless, there are not unlimited vistas along the street. Between Capilano Road and Mckay Avenue the street is straight. At these two points (roughly the District boundaries) the street turns, ending the "view corridor." Views to the north are blocked by an "escarpment ranging in vertical height from about 10 meters to over 60 meters" (Harris Hudema 1994, 3-4). With the escarpment and the limited east-west view corridor, there is a certain sense of enclosure along the Marine Drive corridor.

III. Building Form

As is the case for Granville Street, the collection of buildings along Marine Drive do not create a strong street wall. This results because building heights are typically one story. Also, building setbacks are not continuous.

There is virtually no "architectural cohesion" along the corridor. That is to say that the architectural style of the street's buildings varies significantly.
9. The Developer's Perspective

It is important for one to explore the economic aspects of "revitalizing" Marine Drive. Case study analysis is meaningless if the economic reality is such that the desired condition can not be achieved. Developers must be willing to buy into the idea before it can become a reality.

Evidence suggests that North Shore market conditions are favourable for the addition of residential units to commercial shopping corridors. Higher density apartment condominiums are in demand on the North Shore for a variety of reasons. Most importantly, demand is being prompted by a decrease in overall household size and a large number of both first time byers and empty nesters (Strategic 1993). Further, it is hypothesised that future supply of apartment condominiums will fall short of demand on the North Shore (Strategic 1993). Nevertheless, other North Shore precincts are generally more attractive than Marine Drive for high density residential development.

TRENDS, CONSTRAINTS AND ISSUES

a) Trends

As was outlined, there is a growing societal interest in creating lively, pedestrian-oriented commercial streets. This
trend is especially evident in the Lower Capilano neighbourhood. A recent Lower Capilano residents survey, conducted in the fall of 1994, illustrates the value they see in this type of development. The survey illustrates a desire among local residents to see Marine Drive's commercial role transformed from an auto dependent general commercial corridor to a more traditional shopping corridor offering more "people places" and specialty shops (NVD). It also illustrates that the majority of residents like the idea of a mixed-use scenario -- 64% of respondents felt mixed-use development would be a positive if adequate parking were provided (NVD).

Thus, District Planners interest in creating a lively pedestrian environment along Marine Drive is legitimate. However, evidence from this study suggests that it is premature. Although the corridor is beginning to undergo significant changes, conditions along Marine Drive dictate that a full scale transformation of the corridor can not take place at this time. Nonetheless, steps should be taken now to encourage an appropriate course of development. By building on the corridor's attributes planners and citizens can begin to make significant inroads toward future development.
b) Constraints

Recall for a moment "the requirements of a successful mixed-use commercial street" list generated from the Broadway and Granville case studies. As was outlined, this list can be used as a checklist to determine what is lacking along Marine Drive. In order to facilitate analysis I have recreated the list below, only this time I have noted which of the requirements are lacking at Marine Drive.

Requirements and Marine Drive's Condition:

1. Sufficient Residential Density..................lacking
2. Continuity in Street Level Retail Activity.........lacking
3. On Street Parking..................................lacking
4. Merchant and Community Involvement...............present
5. An Identifiable Node of Activity..............present/lacking
6. Pleasant and Lively Atmosphere..................lacking
7. Transit Service.................................present
8. Location Which Limits Excessive Competition.......lacking
9. Identity.........................................lacking

The above list illustrates the magnitude of change required in order for Marine Drive to function well as a lively pedestrian.
corridor. Some of the "requirements" listed above are obviously more important than others. Nonetheless, all of the conditions listed above are desirable. The lack of these conditions is largely the product of a unique history. Policy initiatives can help to dictate future conditions, yet must recognize constraints and limitations. As many constraints were outlined earlier, this segment will offer only a brief recap of important limitations.

The largest detriment to the creation of a lively commercial corridor at Marine Drive is the lack of sufficient proximate residential density. Pockets of high density residential areas do exist on the North Shore. However, as was outlined, residents of these communities are well served by established commercial centres such as Lonsdale, Capilano Mall Park Royal, and Ambleside. This pattern is deeply entrenched, and newly created residential units generally perpetuate the pattern. Moreover, some past studies indicate that increasing residential densities along Marine Drive would not stimulate the corridor's commercial activity. Instead, these studies hypothesize that residents of these newly created units would simply patronize already established centres. This is a valid concern. Nonetheless, evidence from the Broadway case study suggests that people are willing to walk in order to obtain convenience and some specialty
services. Thus, proximate residential units could stimulate certain types of commercial activity on or near Marine Drive.

Marine Drive is further plagued by a lack of continuity in street level activity. This is largely a product of the corridor's history. Since its conception, Marine Drive has functioned as a link between North Shore commercial nodes. As such it has naturally evolved into an auto dependent commercial corridor, characterized by low intensity land uses and large surface parking lots. These conditions virtually eliminate the possibility of street level continuity in the near future.

There are two important components to street level continuity: form and function. Unfortunately, Marine Drive fails in both regards. With regards to form, it is important that buildings make a presence on the street. Further, combined with neighbouring structures, buildings along the corridor should create an effective "street wall," and thus a sense of both continuity and enclosure. Regarding function, it is important that a street function as a cohesive unit. This does not imply that all buildings provide identical functions. Nonetheless, it stipulates that neighbouring functions complement one another, and that functions which disrupt continuity be situated at peripheral locations.
The absence of on street parking further constrains Marine Drive's potential as an attractive pedestrian precinct. Curbside parking offers numerous advantages, and is integral to the success of any commercial strip. Street parking is a direct function of traffic volume and flow. Quite simply, excessive traffic volumes necessitate the removal of curbside parking. However, as is exemplified along Marine Drive, diurnal traffic patterns also play an important role. Although twenty four hour traffic volumes along Marine Drive are comparable to those along Broadway, peaked flows along Marine Drive necessitate the removal of parking during rush hour. The situation is further exacerbated by the street's physical conditions. Mini-malls, large electronic and home furnishing stores etc., draw consumers from larger distances by car. Hence, these establishments require large parking lots. In order to facilitate access, left hand turn bays have been added along Marine Drive. These turning bays necessitate the removal of massive tracts of curb side parking.

Marine Drive's location in relation to competing commercial centres is a detriment to the future creation of a traditional style shopping street. As was outlined, North Shore residents are well serviced by neighbouring commercial establishments.
From a market perspective Marine Drive's role is legitimate. A problem exists only when political boundaries are taken into account. Nevertheless, there may come a time when the North Shore's population will require more commercial space. For this reason steps should be taken now to direct Marine Drive's future.

If and when future growth dictates that the creation of a pedestrian-oriented shopping district along Marine Drive is feasible, issues regarding atmosphere and identity can be properly addressed. Marine Drive's atmosphere is currently threatening and unappealing. Further, it lacks an identity. Both these conditions are detrimental. However, attempting to address such concerns at this point is futile. Policies which address the constraints outlined above will also help to create both a more inviting atmosphere and an identity.

c) Issues

Three central issues emerge from the previous discussion. First, the discussion leads one to question the validity of transforming Marine Drive into an traditional style, pedestrian-oriented commercial corridor. Instead of asking "how can we transform Marine Drive?," perhaps we should be asking "should we transform Marine Drive?" Evidence from the case studies suggests
that full scale transformation of the corridor is not realistic at this time. The second issue stems directly from the first. Assuming Marine Drive is not a realistic location for mixed-use commercial residential corridor, one may wish to explore possible alternatives. One alternative is to build upon the current auto orientation. This would include an intensification of land use, among other things. Another alternative is to concentrate efforts on Pemberton Avenue. Evidence suggests that Pemberton offers better potential for a successful mixed commercial residential district. Third, the discussion sheds light on the potential consequences of creating a lively, pedestrian-oriented commercial corridor on or near Marine Drive. Such a creation will require increased residential densities, especially in proximate neighbourhoods such as Norgate. We must determine whether or not we are willing to let this happen. Currently, community members have made it known that they do not wish to see any significant changes in the area's already established neighbourhoods.
IMPLICATIONS AND CONCLUSIONS

Realities on the North Shore, and specific constraints related to Marine Drive, dictate that the corridor can not currently work as an lively, pedestrian-oriented mixed commercial/residential traditional style corridor. Its present role is legitimate. However, traditional small scale retail establishments mixed with higher density residential units may be an option at Pemberton Avenue, centred around the Pemberton/Marine Drive intersection and extending south along Pemberton. It must be recognized, however, that Pemberton is plagued by many of the same constraints as Marine Drive, specifically related to residential densities and commercial competition. Moreover, a transformation of Pemberton Avenue will necessitate significant changes in land use zoning. The area's current light industrial zoning must be replaced by a new zone promoting mixed-use residential commercial uses. This raises legitimate concerns regarding the displacement of industrial zoned land in North Vancouver.

Nonetheless, Pemberton Avenue does offer better opportunity for success. The reasons for this are numerous. First, it expands on a naturally occurring node of activity. Second, because the roadway runs north-south it receives smaller traffic volumes, and does not receive substantial commuter flows. Thus
the street has retained its curb side parking. Third, Pemberton Avenue's current physical character is conducive to the creation of a traditional style shopping street. The street already has the makings of a defined street wall, and is not plagued by large surface parking lots. Fourth, some "meeting places" already exist along Pemberton and nearby on Marine Drive. Examples include: The Cactus Club Cafe at 1598 Pemberton; The Pemberton Station Neighbourhood Pub at 135 Pemberton; and the Moustache Cafe at 1265 Marine Drive. Although a small consideration, the success of these establishments is encouraging. Fifth, Pemberton has a conducive topographical profile. Again, this is a small design consideration. Nevertheless, the escarpment located at the north end of Pemberton aids in creating a sense of enclosure.

It must be recognized that the transformation of Pemberton Avenue will ultimately threaten the character of the surrounding residential neighbourhoods, especially Norgate. In order for such a scheme to succeed, portions of this neighbourhood must be transformed into higher density precincts. Current growth trends suggest that higher density development will eventually be required in North Shore neighbourhoods such as Norgate. Only when this has transpired can Pemberton Avenue truly function as a lively pedestrian corridor. In order to ensure that this
development takes an appropriate form, authorities must recognize future potential. Next, they must devise proactive policies which accentuate current favourable conditions, while encouraging sensitive future expansion.
CHAPTER FIVE: POLICY RECOMMENDATIONS

EXISTING POLICIES

Existing policies have failed to create a mixed-use pedestrian orientation along Marine Drive for two main reasons. First, past and present policies have consistently recognized the corridor as an auto oriented commercial strip. Evidence suggests that this is both valid and practical given the circumstances. Nonetheless, it flies in the face of efforts directed at "revitalizing" the corridor (if the term "revitalization" is taken to necessitate a change in street character). A change in character necessitates that polices which recognize the corridor's current orientation as appropriate be abolished.

The second reason for the current policies' failure to realize an intense, mixed-use form of development along Marine Drive is more complex. Failure results, in part, because the problem has not been properly defined. Evidence from this study suggests that the "real" problem stems from the placement of Municipal boundaries. In other words, the problem is a jurisdictional manifestation, not a result of Marine Drive's deficiencies. As was outlined, Marine Drive's role is legitimate when viewed in the context of the North Shore. North Shore residents are
adequately served by a complex network of commercial precincts. Furthermore, North Shore patterns of high density residential development already have established nodes. When viewed from a larger scale, Marine Drive provides an indispensable role as a traffic conduit and auto oriented commercial strip. Thus, identifying the corridor as inefficient, and in need of revitalization ignores important realities.

IMPLICATIONS

Current literature indicates the desirability of mixed-use commercial/residential traditional style corridors. However, it does not elaborate on how, when, or where such a condition can, or should be achieved. Planners must begin to establish sufficient lore regarding this form of land use and development. Social, environmental and economic pressures dictate that we learn more. Having expanded the knowledge base, we can begin to create policy initiatives which better address problems and concerns.

Policy initiatives that should be undertaken are a function of the mosaic of opportunities and constraints which exist for each particular commercial street. Thus, before attempting to formulate policies one must first determine what can
realistically be expected in each particular situation.

The situation at Marine Drive dictates that a successful transformation of the corridor from an auto oriented commercial strip to an pedestrian-oriented commercial corridor is unlikely at this time. However, evidence suggests that future demand may warrant a gradual transformation of Pemberton Avenue. This transformation should begin at the Marine Drive/Pemberton Avenue intersection and, as demand warrants, extend south along Pemberton. Once this precinct has become established, a penetration of mixed-use development could begin both east and west along Marine Drive.

Although this situation generally reflects local Planners' and citizens' desires, it comes with one word of warning. The progression will require residential densification on, and near, both Pemberton Avenue and Marine Drive.

Assuming this "cost" is bearable, one must begin to adopt policies which realistically address the current situation and concerns while directing a future course. Outlined below are a number of policy recommendations suggested for consideration by the District of North Vancouver.
POLICY RECOMMENDATIONS AND FUTURE STUDY

Due to the nature of this segment of the Thesis, "Policy Recommendations and Future Study" will be presented in bullet form. This is done to facilitate readability and to alert the reader to the fact that each policy is important in its own right. Taken together they represent a more holistic approach. Nonetheless, it is legitimate to extract any number of recommendations.

Some policy recommendations necessitate future study, whereas others do not. Thus, "Areas for Future Study" will be outlined in a section at the end.

RECOMMENDATIONS

• Marine Drive's current orientation should continue to be recognized as legitimate in the near future. However, expansion of the corridor's auto orientation should not be encouraged.

• There should be an overall intensification of use along the Marine Drive corridor.
• Marine Drive should be recognized as a major east west corridor, primarily meeting the needs of commuter flows. Evidence suggests that this condition will persist in the future.

• Efforts should be made to encourage redevelopment along Pemberton Avenue. Redevelopment should emphasis a mix of commercial and residential uses. Moreover, it should expand on the existing node of development which exists at the Marine Drive/Pemberton Street intersection.

• Residential densification should be encouraged in some segments of the Lower Capilano neighbourhood.

• It should be recognized that there is a demand for condominium apartments on the North Shore. However, this demand will largely be "consumed" by other North Shore precincts, unless proactive policies are adopted to attract such development to Lower Capilano.

• Two distinct zones should be created in order to direct land use on Pemberton and Marine Drive. These zones should echo
those created for West Broadway in that they emphasize a core periphery style of development.

- The North Shore should be viewed as an "urban system" when attempting to formulate solutions to specific problems.

- The concept of "mixed-use" should be expanded to include mixed commercial and residential uses. The current Official Community Plan for the area recognizes only mixed commercial and industrial uses as "mixed-use" developments.

- Design guidelines should be implemented which outline accepted bulk, massing, and setbacks. "Terraced," or "stepped" developments should not be allowed anywhere along either Pemberton Avenue or Marine Drive.

- Commercial uses should be promoted at grade level along Pemberton Avenue and Marine Drive. This is especially important in the "core" area. Generally, office and residential uses should be located on the upper floors.
• Current beautification efforts should continue along Marine Drive. These efforts should also be extended to Pemberton Avenue. This should include a formal street tree planting program, combined with the development of standards for street furniture.

AREAS FOR FUTURE STUDY

• As it is recommended that residential densification occur in Lower Capilano, a study should be undertaken to determine which precincts could best accommodate this. Particular attention should be paid to the area surrounding Pemberton Avenue, specifically the light industrial areas and areas bordering Norgate.

• The North Shore market is already fairly well served by commercial establishments. Hence it is recommended that a study be performed to determine if any particular niche markets offer potential for expansion. This information would enable Planners to determine what type of milieu might best suite Pemberton Avenue.
• The use of two distinct zones is deemed appropriate. At this point a list of permitted uses for each zone is lacking. Thus, a study should be commissioned to determine what each of the two zones should include. The Broadway zones, C-2C and C-2C1, can be referred to for guidance.

• Evidence from this thesis suggests that Marine Drive functions well when viewed in the North Shore context. A problem exists only when Municipal boundaries are considered. Hence, amalgamation of the North Shores' Municipality is suggested as an area of future study. Although this has been studied on prior occasions, new developments necessitate that it be revisited. The imbalance in commercial and residential uses which exists between the District and City is expected to intensify as a result of continued growth at Lower Lonsdale. Another area of potential study could focus on the potential creation of an overriding authority such as the GVRD. Unlike the GVRD, this authority would have to have more than advisory powers.

• "Big box retailers" pose a significant threat to the future success of a mixed-use commercial precinct at either Pemberton
or Marine Drive. Thus, it is recommended that a study be undertaken to determine the desirability of this type of retailing in the District of North Vancouver.

- Office uses are an important ingredient to a mixed commercial street, providing proximate work opportunities. However, they tend to break street level continuity. A future study should explore this situation in more detail, attempting to discern which particular uses are not appropriately located at grade level. For example: are travel agencies and financial institutions acceptable at grade?

- Community and institutional uses are important. The addition of these uses should be studied in some detail to determine where these particular uses are most appropriately located.

- A study done by Neale, Staniszkes, Dole architects found that some projects along Broadway were marred by design problems. Using this study as a spring board, design issues should be studied in the Pemberton/Marine Drive Context. Stemming from this, guidelines should be formulated to guard against undesirable design problems.
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