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THE ACOUSTIC EXPERIENCE OF PLACE: AN EXPLORATION
OF THE SOUNDCAPES OF THREE VANCOUVER AREA
RESIDENTIAL NEIGHBOURHOODS

by

Christopher James Smith
B.A. (Hons) Liverpool University 1982
M.A. University of Alberta 1985

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
in the Department
of Geography

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July 1993

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The Acoustic Experience Of Place: An Exploration Of The Soundscapes

Of Three Vancouver Area Residential Neighbourhoods

Author:

Christopher James Smith

(date)
Abstract

For virtually everyone there is a deep association with, and consciousness of, the place they grew up, where they live now and the places in which they have had moving experiences. Indeed, places are structured through the processes of everyday life, and are based on day-to-day practices. Through the routines of daily living the everyday environment becomes familiar and known, with place being the personal interpretation of the experiences and meanings that emerge from specific situations in the practices of everyday life. The human experience of place is multidimensional, yet the non-visual dimensions of place, including sound, have received limited attention within the geographic literature. Despite the fact that sound remains a continuous feature of places at a variety of scales there has been little research on its role in the human experience of different places.

The current study examines the role of sound in local residents' experience of place. The soundscapes of 80 residents in the three Vancouver area neighbourhoods of Commercial Drive, False Creek and Ambleside form the focus of the study. Two methods of inquiry are used. First, the temporal and spatial variations in local sounds are presented in brief acoustic portraits. Second, characteristic sounds residents hear as they go about their daily lives are identified, and the role of these sounds as regulators or identifiers of local events and activities is explored using an interpretive approach.

Study findings emphasize the temporal basis of acoustic experience. The occurrence and recurrence of sounds forms an integral component of the character and nature of individual places. The same place is filled with a variety of sounds that remain in a constant state of flux. Through the recognition of
recurrent patterns within this flux order is established, and a sense of place defined. Over time, particular patterns or sequences of sound become familiar and not only provide information about local events and activities, but also become invested with affective or mnemonic qualities.

Based on the acoustic experiences of the 80 local residents, the dominant acoustic senses of place are identified for each of the three study areas. For many residents, the typical acoustic experience is one of discrete sounds jammed by the repetitive roar or rumble of traffic flows. The result is a detached acoustic experience of place which for some residents forms part of a deeper alienation from place.
To my dear wife Brenda, my fellow traveller through life.
I don't know the song of this place. It doesn't quite know its own tune. It starts with a deep full note on the mighty cedars, primeval, immense, full, grand, noble from roots to tips, and ends up in a pitiful little squeak of nutbushes.

Emily Carr, Hundreds and Thousands: The Journals of an Artist.
This thesis is the endpoint of a long journey of exploration and discovery. Fortunately, I did not travel alone but was guided along the way by a small group of fellow travellers to whom I remain eternally grateful. First and foremost, I must thank my Thesis Supervisor Dr. Len Evenden for his intellectual guidance, patience and friendship. His clarity of thought and insight proved a veritable beacon in times of confusion while his friendship was a source of considerable comfort. I am similarly indebted to the second key member of my Advisory Committee, Dr Bob Horsfall. His uncanny ability to see the many sides of the seemingly same problem at the same time was a decided bonus, as well as a constant invitation for me to spread my intellectual wings. Professor Barry Truax, the third member of my Advisory Committee, turned out to be the academic equivalent of the "lost chord". The warm welcome he extended to me as I quite literally ventured 'down the hall' into the rich world of sound and soundscapes was much appreciated as was his continued tutelage in the fine art of researching and writing about sound. Dr. Warren Gill, in the role of Internal External Examiner (such a strange sounding title for such a nice fellow), provided me with much still to ponder, while Dr. J. Douglas Porteous, my External Examiner, allowed me to benefit from his considerable eloquence and expertise in writing and thinking about things geographical. Finally, I would like to thank my wife Brenda for her continued help, support and encouragement throughout the research and writing of this thesis. She remained true to the end.
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Chapter One: Introduction

1.1 Background to the Study

For many geographers the quest to understand the nature of place has come to define the very nature of the discipline itself. An Ad Hoc Committee of American Geographers (1965, p. 7), for example, concluded that the "modern science of geography derives its substance from man's sense of place", a conclusion that echoes the much earlier remark of Vidal De La Blache, "La geographie est la science des lieux." Geographic discussions of place are numerous and diverse, and reflect the varied philosophies and theoretical approaches that characterize the discipline as a whole: from a positivist perspective with an emphasis on place as location; from a structurationist perspective with an emphasis on locale, that is the setting for everyday routine social interactions provided in and by a given place; and from a variety of humanistic perspectives with place viewed not merely as a fact to be examined within the broader context of spatial relationships, but rather as a reality to be explored and understood from the perspective of the people who experience it and give it meaning. Of these different approaches, the humanistic and structurationist have received the greatest attention within the recent literature, and together have brought the study of place once more to the forefront of geographic inquiry.

Despite its enduring nature, the discussion of place has been characterized by a series of highs and lows in terms of its research prominence, the result of shifting philosophical and methodological paradigms within the discipline. During the 1960s when the use of quantitative methods of analysis came to prominence in geography, the discussion of place was somewhat neglected as many geographers chose to focus on the description and examination of
large-scale spatial relationships or patterns through the use of mathematical or statistical methods, rather than the exploration of the more context-specific, small-scale sets of relationships, and use of idiosyncratic approaches, associated with the discussion of place.

By contrast, the re-emergence of place as a focus of geographic inquiry was heralded in the 1970s by the work associated with the broadly defined humanistic traditions which initially sought to return humankind to the forefront of geographic inquiry, and subsequently to explore the world of experience (Ley and Samuels, 1978). As a result of these preliminary humanistic explorations, both place, and the related sense of place - that is the meaning of place for the individual - became broadly recognized as significant elements within the context of the lived space of the everyday world and once more foci for geographic inquiry. Both the attachment to place and the development of profound ties with places, for example, were acknowledged as important human needs (Buttimer and Seamon, 1980), and places considered essential building blocks within the social and psychological worlds of the individual (Hay, 1988). As Relph (1976) concludes:

A deep relationship with place is as necessary, and perhaps as inevitable, as close relationships with people; without such relationships human existence while possible is bereft of much of its significance (p. 4).

A critique of the conceptual foundations that underpin these early humanistic studies has provided the basis for a further study of place that focusses on the local social worlds, or locales, defined within the geographic confines of specific places (Eyles, 1985; Pred, 1984). Thus, a number of geographers, influenced by the work of social theorists such as Foucault and Giddens, who both assert the importance of space in social theory, have attempted to reconcile what may loosely be termed the geographical and
sociological "imaginations", with place the vehicle for, or expression of, such a unification.

Under the broad heading of structurationist approaches, derived primarily from the work of sociologist Anthony Giddens, these geographers continue to seek a middle ground between what they consider the overly structure-oriented approaches of marxism and the overly agency-oriented emphasis of humanistic geography. Principal among these geographers is Allan Pred who has aspired to develop a theoretical foundation for a revitalized place-centred or regional geography. An emphasis on the time-specific activities, and the dynamic nature and role of places dominates Pred's work. Indeed, Pred ultimately conceptualizes place as a process whereby:

the reproduction of social and cultural forms, the formation of biographies and the transformation of nature ceaselessly become one another at the same time that time-space specific activities and power-relations ceaselessly become one another (1984: p. 282).

A final recent trend within the place literature may be found in the work of a small number of geographers who all suggest the value of an integrated study of place that draws, at least in part, on the diversity of the concept as discussed within the humanistic, structurationist and even positivist literatures (Agnew, 1989; Johnston, 1991b; Seamon, 1989). This move toward a more integrated framework for the study of place draws on its complementary dimensions namely location, physical form, locale and the people who live there, and further emphasizes the fundamental interconnectedness of these dimensions rather than their mutual exclusivity. Although the final manner in which the different elements are linked varies, a product of the particular research framework which individual authors adopt, the focus remains one of engaging the numerous
dimensions of place as a composite whole rather than emphasizing one aspect or another. Thus, location, space, physical form, local activities and the people who live there are acknowledged as integrated elements within a given place, all of which are further influenced by the broader structural processes that contribute to the shape of society as a whole.

While the study of place is an enduring theme within geographic literature, and place itself one of the basic concepts that provides a focus for the discipline (Paasi, 1986; Johnston, 1991b), the discussion of place by geographers remains an ongoing process, and one that continues to excite the interest of researchers from a variety of different perspectives. Relph (1976) relates this ongoing interest to the fact that place, in its own right, is not merely a formal concept which awaits precise definition, but rather a naive and variable expression of geographical experience. Arguments for the centrality of place in geographic research aside, however, it remains clear that uncertainty continues to cloud both the geographical and sociological dimensions of specific places, as well as the varied senses of place developed by the local residents who live there.

While places are recognized as real-life phenomena that contain real objects and ongoing activities, there remains a limited understanding of both the constitution of places and the ways in which the people who live there experience and understand them. Although place has been explored as a meaningful existential category by humanistic geographers, it has not been explicitly investigated from the standpoint of the concrete everyday experiences of the local residents who live there, the people who create it and give it meaning. In recognition of the uncertainty that continues to cloud both the exploration and understanding of place, it is the object of the current study to provide some additional insights into the nature of the human experience of, and relationship with, these fundamental components of our geographic world. The
current thesis approaches this through an exploration of what to date has been a neglected dimension of the geographic study of place, namely, that of the acoustic.

1.2 Place and the Neglected Acoustic Dimension

The study starts from the position that places are now broadly recognized as basic elements of human geographic experience. For virtually everyone, there is a deep association with, and consciousness of, the place in which they were born and grew up, where they live now and the places in which they have had moving experiences (Seamon, 1989; Ley, 1981a; Relph, 1976; Tuan, 1977). These relationships constitute a vital source of both individual and collective identity and security, and form a point of departure for orientation in daily life. At a fundamental level, places are structured through the processes of every day life, and hence based on the day-to-day practices of individuals. Through the routines of daily living the everyday environment becomes familiar or known, with place the perpetual, personal interpretation of the experiences and meanings that emerge from time-specific situations in the practices of everyday life.

As an extension of this familiarity, people commonly develop a sense of place which refers to their personal connection with the specific spaces around them. This sense of place is built up through continued residence in a particular setting, as well as the ongoing involvement in the daily routines and activities that unfold there. One's 'place' is, thus, the familiar region of habitual routine and interaction, the place in which one is comfortable and secure. The net result of getting to know a place is often a strong sense of attachment, that is a well-developed sense of place, which may contribute as much to the sense of well-being of the individual, as do close relationships with other people. Indeed,
the human experience or consciousness of the world invariably centres on particular places, while the recollection or understanding of phenomena is necessarily contextualized by the simultaneous recollection of their occurrence in a specific place.

Despite the significance of places within daily life, however, little research has considered the varied dimensions of the human experience or sense of place. As Relph (1976) argues:

We live, act and orient ourselves in a world that is richly and profoundly differentiated into places, yet at the same time we seem to have a meagre understanding of the constitution of places and the ways in which we experience them (p. 6).

The task of such inquiry, however, is not an easy one. For the most part, human experience of the everyday world is not self-conscious, although it is clearly structured. Recent articles in human geography describe the experience of place as operating across three interrelated dimensions: the perceptual or cognitive domain of awareness, attitudes and memories; the emotional or affective domain of feelings, preferences and values; and the experiential domain of bodily and sensory contacts (Seamon, 1989; Casey, 1990; Porteous, 1989). The result of the interaction of these individually based, but group informed and localized means of relating to the world, is the transformation of spaces into personal places, and the development of attachments, meanings and significance.

Within this complex interrelationship of everyday experiences and attachments, the individual places that form the basis of daily living are not encountered as independent, clearly defined entities that may be readily categorized or described simply on the basis of location or appearance. Rather,
they are sensed within a collage of setting, landscape, routine and personal experience, and remain multi-faceted phenomena of experience. The everyday human experience of places is multi-dimensional, and involves a complex array of bodily, emotional and intellectual intentionalities, which literally reach out to the world as it actually is, as well it is in imagination.

The multifaceted dimensions of human experience, which serve to immerse people in their local worlds in a variety of different ways, have, for the most part, been only briefly discussed by geographers. Despite the fact that both writers and poets have frequently celebrated the rich array of sounds that fill the places that make up the geographic world, the acoustic dimension of daily life has generally been overlooked in favour of a focus on the visual aspects of human experience and intention. This neglect of sound within geographic inquiry is on the one hand understandable, given the dominance of sight within western culture and science (Pocock, 1989; Porteous, 1985). On the other hand this neglect is surprising, given the richness, diversity and cacophony of sound that fills the world. Preliminary geographic explorations of the acoustic dimension, although limited, do suggest, in conjunction with the related findings from the acoustic literature, the importance of sound both as a facet of different environments, and as a fundamental component of the human experience of particular places and spaces (Porteous and Mastin, 1985; Southworth, 1969; Truax, 1984; Schafer, 1985). While the preliminary efforts of geographers to explore the world of sound are described at length in Chapter Two, a brief consideration of the acoustic dimension, with specific reference to the basic environmental nature of sound, and its fundamental role in the human experience of the everyday world, suggests the significance of sound as a central element within the geographic exploration of place, and provides the framework, or argument, for the current study.
1.3 Sound and the Human Acoustic Experience

The varied places of the everyday world are filled with sounds, sounds of greater or lesser intensity, higher or lower pitch and more or less dramatic rhythm. Sound forms one of the principal contexts within which and, through which, human orientation in time and space occurs. The acoustic experience is a pervasive one, so pervasive that a certain perceptual satiation must be overcome before the regularities and rhythms of its occurrence may be recognized. All environments, whether natural or man-made, public or private, internal or external, are filled with their own unique sounds which remain a constant feature of their ambience and character. In short, sound permeates the human experience of the world right down to the individual level of recognition and awareness (Smith, 1987), and remains a continuous feature of places at a variety of scales.

From a technical perspective, sound is a mechanical disturbance in the form of pressure waves produced by the motion or vibration of an object. The motion of the vibrating object is impressed upon the surrounding medium (usually air) as a pattern of change in pressure. As the sound wave moves outward in all directions from its vibrating source it compresses the particles in the surrounding medium together, which is in turn followed by a reverse pulling apart. The human encounter with this world of physical vibration, through the process of hearing, starts with the sensitivity to these changes in pressure, or vibrations, which are registered as they are converted into nerve impulses (Moore, 1982; Roederer, 1975). Through hearing, contact with the acoustic world is made, and the human acoustic experience begins.

The human ear is sensitive to vibrations across a wide range of intensities and frequencies. The audible range extends from the "threshold of hearing" (that is the slightest intensity level that excites the auditory system), to the "threshold
of pain" (the intensity level that results in physical discomfort) (Truax, 1984). The difference of intensity between these two levels is vast, with the threshold of pain a trillion times greater than that of hearing. The sensitivity of the ear to this range of sound intensities fluctuates constantly, a physiological response similar to the dilation of the pupil in response to variable light levels (Moore, 1982).

The range of frequencies to which the ear is sensitive is similarly large, and extends from the lowest recorded sensations at around 20 Hz to the highest at approximately 20 kHz. These frequencies are only approximations, however, and in empirical case studies the upper range seldom exceeds 18 kHz for the young adult, and through continued exposure to high intensity environmental noise is further reduced (Truax, 1984; Moore, 1982; Rosen, 1962). At very low frequencies, for example below 25 Hz, the acoustic sensation of pitch is replaced by that of physical vibration, a reflection of the physical nature of sound as a pressure-based waveform (White, 1975). Similar sensations may also be experienced in situations of very loud noise, such as the departure of jet aircraft from an airport. In this case, a feeling of movement is often discernible, particularly in the chest area, as though the sound were exerting a physical pressure on the body, and setting up vibrations which may actually be felt (Burns, 1969).

The physical nature of sound, allied with the acute sensitivity of the human ear, dictates that acoustic experience is both dynamic and all-encompassing. In broad terms, the physical world of sound is one of 'events', 'activities' and 'sensations', which contrasts with that of the electromagnetic spectrum of light which is one of 'objects', 'artifacts' and 'reflections' (Pocock, 1989). The extreme speed of light, for example, means that the world of visual perception is one of instant information availability that provides the viewer with an immediate
image of the details of an environment. Through sight, the environment is scanned for specific details and an instantaneous, three-dimensional, topographic image of the world is compiled (Schafer, 1985). By contrast, the acoustic world remains in a constant state of flux, characterized by the flow of sound events that come and go in ways not necessarily predictable.

Something is happening for sound to exist, although commonly the sources of individual sounds remain out of view. As a result, the first impression of many events is an acoustic one. The acoustic world is fluid as compared to the visual dimension, and has a transitory and unfocussed nature. In the world of sound there are few clearly defined boundaries, with sound itself emphasizing space rather than objects. Through hearing, one compiles a less-detailed but more comprehensive perspective of entire environments in all directions at once. This complements the more focussed and static world of vision.

In addition to differences in the perceptual nature of the acoustic and visual worlds, important distinctions exist between the quality of the experiences associated with each. The world encountered from an acoustic perspective is 'primitive' and 'sensation-rich' as compared to the more 'detached' or 'objective' world of vision (Ong, 1971, Schafer, 1985). Sound surrounds the listener, who is permanently encased within an acoustic world from which there is little escape. While the observer stands literally on the edge of visual space gazing in at objects, forms and surfaces in a somewhat detached manner, the listener stands at the centre of acoustic space listening out with the ear (Idhe, 1976). The observer may easily shut out the visual world through the blinking of an eye, or alter its composition by averting a gaze, the listener on the other hand frequently has little choice or control over the sounds that he or she might hear from both near and far, and all directions.

As a result of its intimate and physical nature, sound is strongly linked to
feelings and emotion, and has the potential to reach to the very core of human fears and aspirations:

We lived in acoustic space . . . boundless, directionless, horizonless, the dark of the mind, the world of emotion, primordial intuition and terror (McLuhan, 1953, p. 59).

The affective properties of sound not only evoke sensations and feelings, but also commonly signify a sense of life and existence. Environments without sound seem lifeless and surreal. They have little sense of involvement, a reduced sense of flow or rhythm and a lack of anticipation (Ackerman, 1990; Southworth, 1969). The perceptual horizons of soundless environments are reduced as the world literally closes in on the listener (Reynolds, 1978; Stark, 1974; Rapoport, 1977).

The enriching and vibrant qualities of sound dictate that the psychological consequences of deafness may be even more debilitating than those of blindness (Tuan, 1974b). Indeed, after a short period of silence, the severe loss of acoustic information commonly induces anxiety, disassociation and withdrawal among the deaf, as the veil of silence condemns them to a world that has lost its reality (Knapp, 1948; Grant, 1988). Specific patterns of sound have the potential to soothe or stimulate, to excite or frighten, in short to move, and their loss to any degree is a severe emotional and psychological blow (Pocock, 1989). As Tuan (1974b) comments:

The eyes gain far more precise and detailed information about the environment than the ears, but we are usually more touched by what we hear than by what we see. The sound of the pelting rain against leaves, the roll of the thunder, the whistling of the wind in the tall grass, and the anguished cry excite us to a degree that the visual image can seldom match (p. 8 ).
In addition to its physical and emotional properties, sound further retains a symbolic or mnemonic quality. Through the 'trigger' of a few notes, it is able to stir the thoughts and emotions, as well as conjure up whole worlds or past experiences (Truax, 1984). Sounds are stored in the memory complete with their environmental and temporal context (Schafer, 1977a; Truax, 1984). Distinctive sounds such as those from childhood, for example the ringing of a handbell or the sound of excited voices in a playground, are thus able to return the listener to former times and places. Indeed, memories of distant times and places frequently retain an acoustic dimension, and much autobiographical literature includes references to the sounds of former times and places.

Drawing on the work of Jung, Schafer (1977a) goes so far as to suggest that specific sounds may even function as "archetypes", or universal symbols, that draw upon inherited, primordial patterns of experience and reach back to the beginnings of civilization, crossing linguistic and cultural divides. Among such sounds he includes those of water, a vital resource for all human civilizations:

Of all sounds, water, the original life element, has the most splendid symbolism... Rain, a stream, a fountain, a river, a waterfall, the sea each makes its unique sound, but all share a rich symbolism. They speak of cleansing, of purification, of refreshment and renewal (p. 110).

The empirical data to support such an assertion are not easily attainable, however, and the relationship itself may be more usefully considered as metaphorical rather than archetypal. Thus, the aural image conjured up by the "intricately detailed texture and overall continuity of running water" serves as a metaphor for life processes rather than semiotically functioning as them (Truax, 1984). Nevertheless, the evocative qualities of different sounds remains clear, and are further supported by the almost universal use of sound in religious
ceremonies and rituals across all cultures (Schafer, 1985). Sound within this context frequently takes on a meaning and significance far removed from its earthly transience, and provides a means of contact with the spiritual realm. Within surviving totemic, or other primitive societies, specific sounds still retain such an enlarged meaning, and are considered to represent the voice or spirit of variously defined powers and deities (Stroller, 1984; Feld, 1982).

The power of sound to stir emotion and feeling in the listener, to "penetrate to the very core" (Pocock, 1989), relates both to its mode of perception, and to its physical properties as a pressure-based waveform. Research on the human reaction to vibration and rhythmic periodicity, for example, substantiates the ability of sound to move, stir or 'touch' the listener, enfolded within its invisible force. Experimental findings indicate that the tissues and cells of the human body, made up almost entirely of plasma, are responsive to the organizing power of sound (Lawlor, 1978; Pocock, 1989). The physical vibration of sound has a physiological impact upon the listener that remains beyond either intellectual or cognitive control, and as a result the listener is literally 'moved' by the sounds heard and felt.

While sound thus remains an important component of human experience, the ubiquitous presence of sound, as well as its physical nature, suggest a more fundamental relationship between sound, the listener and the environment, such that the three are intimately related and part of a unified totality. This explicit geographical dimension of the acoustic dimension is briefly considered next.

1.4 Sound, Environment and the Listener

The physical properties of sound dictate that all sounds are a product of a complex interplay between their source and their context. The environmental setting of any sound, for example, shapes its form and gives it a particular pitch,
tone, strength and reverberation. The sounds that surround the listener not only serve as a record of the details of the vibration of their source, but are also "an analogue of the current state of the physical environment" (Truax, 1984). The significance of this, not least for the geographer, is that all sound is environmental in nature. The sounds of a specific space or environment, for example, are not merely the product of the varied activities that unfold there, but also a reflection of every aspect of its form and location. No physical feature fails to affect the propagation of sound, and the reverberant or absorbant qualities of varied materials and structures all influence its form. Space itself affects sound, not only by modifying its perceived structure through reflection, absorption, refraction and diffraction, but also by influencing the very characteristics of its production.

The subtle interplay between a sound and its context is perhaps most noticeable in built-up environments or interior spaces, where the scale of acoustic interactions are such that they may be more readily discerned and described. The close relationship between sound and the built environment has been considered by both philosophers and scholars alike. Indeed, an appreciation for the acoustic dimension was a common feature of the design and construction of early buildings (Lord and Templeton, 1986; Lawlor, 1978; Neutra, 1969). Schafer goes as far as to suggest that the majority of ancient buildings in both European and Islamic architecture were constructed "not so much to enclose space as to enshrine sound" (Schafer, 1985, p. 93).

Archaeological and literary evidence lends support to this conjecture, with the exceptional acoustics of the Greek amphitheatres testimony to Grecian expertise in dealing with the acoustic dimension of design. The voluminous "De Architectura" by the Roman architect Vitruvius, dating from the last quarter of the first century B.C., further substantiates the classical architect's knowledge of
sonic design, and includes one book devoted to the discussion of the acoustic principles of design and construction (Plommer, 1973).

Differences in the design and scale of interior spaces, allied with the use of varied building materials and finishes, result in environments with particular acoustic characteristics. Chronological reviews of church architecture, for example, reveal fundamental differences between the reflective and absorbant characteristics of churches built before and after the Reformation. Medieval church buildings with their predominantly stone floors, walls and pillars were reflective acoustic environments with extended reverberation time. These particular acoustic characteristics in turn matched the slow tempo of church music and the development of Gregorian chant or plainsong. By contrast, after the Reformation architects adorned church buildings with wooden pews, galleries and carvings, as well as heavy curtaining, all of which resulted in much greater sound absorption and a considerable reduction in reflection and reverberation. These new acoustics accommodated the revised focus on preaching the word and the new ideals advanced (Bagenal and Wood, 1931; Lawlor, 1978).

While the complex relationship between sound and environment may be more readily discerned within interior spaces, the varied sounds of external spaces also reflect the form and structure of their setting. The acoustic interactions within external environments, however, are more varied and complex given the broader array of sounds heard there, the generally larger scale of exterior as opposed to interior settings, as well as the diversity in the topography and form. Nevertheless, just as every facet of an interior space is reflected in the sounds that are heard there, so every component of the external environment is captured within its acoustic profile. The topography, the presence or absence of vegetation, and the reverberant qualities of space all have
an impact on the patterns of sound that result. Atmospheric conditions, such as air humidity, thermal stratification and prevailing wind directions further combine to variously direct, refract, attenuate or dissipate sound emissions (Pocock, 1989). The impermanence of sounds, allied with their presentation in a "myriad of temporal rhythms", further give the external acoustic environment a sonic character that changes constantly according to the time of the day, day of the week and time of the year. The resultant combination of sounds forms a distinctive signature of both the form and function of any environment or space and contributes to its distinctive character or ambience.

In addition to the ubiquitous presence of sound as an integral dimension of the varied spaces and places that provide the geographical framework for daily life, the role of humankind as soundmaker, as well as listener, confers a more active role on sounds as part of everyday life and routine. Archaeological evidence indicates that humankind has made and used sound as part of daily life since the beginning of civilization (Ostwald, 1963). Cultural differences, customs and traditions aside, the human production and use of sound is universal. People manufacture and use sound quite deliberately to alert one another or draw attention to events and activities, to communicate and exchange messages or for love, entertainment or combat.

The human voice, for example, remains humankind's most important means of communication - and the sounds to which people are most sensitive as listeners. From an early age, children use and experiment with their voices to create sounds and messages through both formal language, as well as non-verbal communication. Similarly, adults retain a basic dependency on their own sound making capacity, particularly their voice, to express ideas and feelings and communicate with others. In different settings, the voice is used for varied reasons be it the communication of information, relaxation, entertainment or
even punishment, and within each the requirements for voice and speech vary
depending on the activities that unfold there, as well as the soundmaker’s
interpretations of them. Within churches, for example, the voices of the
congregation are generally presented in either hushed or whispered tones offered
in prayer or in raised dulcet tones in song. This intimate relationship between
voice and context, however, extends further than conscious adaptation and use
dictated by either custom or culture. Truax (1984), for example, suggests that
the soundmaker "almost involuntarily . . . modifies the style and the quality of
speech to 'match' the environment" (p. 31).

In addition to the human propensity to manufacture vocal sounds for varied
reasons, further sounds are also commonly used as important markers within the
temporal and spatial dimensions of everyday life. In particular, the specific role
of individual sounds as factors in the design of early settlements, as delimiters of
space and territory, and as recorders or markers of time clearly indicate the
close relationship between sound and society.

The range and qualities of the human voice - the essential building block of
communication and organization prior to the mass production of the written
word influenced the layout and structure of many early settlements. Early ninth
century Hun communities, for example, were arranged to allow news to be
conveyed by means of the human voice between the ramparts, hamlets and
farmsteads. Similarly, the "long-lot" farms of early settlements along the banks
of the St. Lawrence River were arranged with the farmsteads placed within
shouting distance of one another so that news of any surprise attack could be
quickly relayed between them (Porteous, 1990; Schafer, 1985).

Plato, within his model republic, further used the range of the human voice
as the basis for defining the size of the ideal community at 5040 citizens, the
number that could be effectively addressed by a single orator (Bloom, 1991).
Such a population threshold would also have been in keeping with the size of Weimar during the lifetime of the early humanist writer Goethe when the former described it as possessing a distinctively human sense of scale embodied specifically in the evening cries of the nightwatchman (Schafer, 1977a).

In addition to the importance of sound within the definition of early settlement structure and design, historical and literary evidence further suggests the importance of specific sounds both as temporal markers and as geographical delimiters of political structure and daily routine. The church bells of early Christian Europe acted in a centripetal manner unifying the community in a social, religious and political sense, as well as serving as recorders and indicators of the passage of time. Indeed, church bells were a widespread and integral component of townscape by the beginning of the eighth century, with both their meaning and intention clearly understood (Wagner, 1972). Johann Huizinga recorded the significance of these acoustic landmarks in his testimony to early urban life, "The Waning of the Middle Ages":

One sound rose ceaselessly above the noise of busy life and lifted all things into a sphere of orderly serenity: the sound of the bells. The bells were in daily life like good spirits, which by their familiar voices now called upon the citizens to mourn and now to rejoice, now warned them of danger, now exhorted them to piety . . . Everyone knew the differences in the meaning of the various ways of ringing. However continuous the ringing of the bells people would seem not to have become blunted to the effects of the sound. (Huizinga, 1954, pp 10-11)

The sound of the church bells thus served as all-purpose calendars which announced festivals, births, deaths, marriages, fairs and even wars and revolts. But they also came to represent more than this assuming symbolic qualities associated with order and power. In this capacity they served as a constant reminder of place both social and geographic.
Just as the sound of church bells came to define and order the life of many early Christian towns and communities, so other important acoustic elements may also be identified. The varied sounds of different economic activities and transportation systems, for example, remain prominent in many settlements and serve to define and regulate the daily activities of particular places (Lynch, 1972; Rapoport, 1977). In pre-industrial societies, where examples of such occurrences were more plentiful, one of the most prevalent soundmakers was the mill whose characteristic sounds and rhythms were not only associated with the economic base of the community, but also symbolized its lifeblood and socio-political order (Schafer, 1977a; Truax, 1984).

Schafer (1977a, 1985) suggests that the presence of what he terms "Sacred Noise" characterizes all societies. The association in the human imagination between sound and power, he opines, has never been broken. Loud sounds have traditionally evoked fear and respect back to the earliest times when they were considered to be the expression of Divine power. Within modern societies, however, he notes how the nature of the sources of these sounds or "Sacred Noises" has changed, and moved from natural events (thunder, volcanoes and storms), to the sound of the church (bells) and more currently to the sounds of the modern technological age (aircraft, cars, and industrial processes). Thus, just as the visible landscape of a community or society reflects its prominent social, economic and political institutions, so, Schafer argues, the acoustic environment is filled with the sonic expression of the same power structures. As Schafer states, whoever has the power has the "sacred noise", and the authority to make it without censure.

Despite the fundamental contribution of sound to the human condition, as well as the intimate relationship between sound, environment and the listener, there have been few attempts to explore the acoustic dimensions of everyday
life. While any discussion of the environmental properties of specific acoustic environments must acknowledge that they are both more episodic in time, and more discontinuous in space than the visual landscape (Porteous, 1990; Schafer, 1985), it may be argued that sound, given its ubiquitous nature, as well as its sensual, evocative and informational properties contributes significantly to the ambience, texture and character of different places, and is thus an important dimension of the human experience and understanding of these places (Pocock, 1989; Porteous, 1990; Schafer, 1985; 1977a). Barring disability or injury, human beings are immersed within acoustic worlds from which there is little respite. The sounds of individual environments or spaces combine in unique ways such that their patterns are characteristic and part of the human experience of those spaces. Sounds have meaning only in their contexts, and serve, geographically, not only to provide distinctive signatures of local forms and functions, but also to structure and order the everyday social interactions that unfold in specific places.

1.5 The Research Problem

With its focus on the acoustic experience of place, the research is framed within the broad theme of ongoing geographic interest in the manner in which 'ordinary' people leading 'ordinary' lives encounter, perceive and perhaps reflect upon the places, spaces and environments which form the basis of their daily worlds. It is, thus, one further part of the recent call for the development of 'everyday geographies' that examine the places in which people live, work and recreate; the houses, streets, offices, schools, parks in which they spend the majority of their days, and toward which they almost unavoidably develop a sense of place - a rudimentary understanding of the place itself - allied with a nagging feeling of liking, disliking, accepting, rejecting and so on.
Local residents' acoustic experience of place, specifically the places in which they live and spend the majority of their time outside of work, forms the focus of this study. Despite a small number of studies, the discussion of sound by geographers remains limited, particularly as it relates to local residents' understanding of, and attachment to, the places that form the basis of their daily worlds. The physical, informational and emotive qualities of sound suggest its ability to facilitate intimate or intense relationships between local residents and the places in which they live, such that it is through the sounds that they hear that an environment or space becomes meaningful and alive (Southworth, 1969). Pocock (1989), for example, asserts that sound remains a fundamental element in the development of place: "the general presence of sound contributes to the process whereby environments become places, places with particular atmosphere, feeling and ambience" (p. 194), and in so doing adds a geographic dimension to Schafer's (1985) earlier assertion: "It is in the sounds one hears that the world becomes palpable and complete. Without the treasury of the soundscape, the world is barren and its objects remain hidden" (p. 96).

Geographic explorations of the acoustic dimension remain limited, however, and the topic of sound in general is a neglected component of geographic inquiry (Porteous, 1990; Porteous and Mastin, 1985; Porteous, 1982). It is not only geographers who have overlooked this key dimension of everyday life and experience, however. Social scientists in general have, while outlining the importance of sound in human perception and experience, largely failed to examine specifically the acoustic dimension of everyday life. Of the studies that have been completed the majority have not been concerned with the broad subject of sound, but rather have focussed on the narrower 'applied' subject of noise. Sound, thus, remains an important component of the everyday geographic world that awaits further investigation, and hence forms the focus of
the current study.

The small number of studies completed leave a number of unanswered questions on the role of sound in local residents' experiences of and attachments to the places in which they live. While it seems prudent to assume that personal and environmental factors come into play, the current fragmented insights are not sufficient to furnish a clear understanding of the basic structures and dimensions of the relationships that develop. This initial lack of understanding subsequently weakens broader comprehensions of the ongoing nature of residents' involvements in, and attachments to, the places that form the basis of their daily worlds. While it may be deduced that all facets of human experience, including the acoustic, are interwoven in the totality of geographical experience, and hence represent important clues in understanding the relationship of the individual to his or her local environment and lifespace, the discussion of the varied dimensions of these relationships is at present only weakly developed in the literature.

The major research question asks: In what sense is sound involved in local residents' understanding of, and attachment to, the places in which they live, and spend the majority of their daily lives outside of work? Additional questions that develop from this major focus centre upon the nature of local residents' acoustic experience of place, allied with a concern for a greater understanding of the acoustic qualities of individual places that contribute to their particular character or sense of place. Thus, subsequent questions ask, what are the major dimensions of residents' acoustic experience of place? How is the array of sounds that residents hear ordered and structured? In what ways do sounds provide residents with information about local events and activities? How do the acoustic experiences of individual residents in the same neighbourhood vary over both space and time? What impact do individual loud sounds or elevated
local sound levels have on residents' acoustic sense of place? What are the essential acoustic qualities that underlie particular places, and promote their particular character or identity for local residents? And what are the dominant acoustic experiences of modern urban living?

1.6 The Study

The study adopts an empirical approach to the exploration of the acoustic experience of place. It examines the acoustic experiences of 80 local residents living in three Vancouver area neighbourhoods, and uses these as a basis for identifying the varied dimensions of local resident acoustic experience of place, as well as the dominant acoustic senses of place for each study area. While the study focusses on the varied ways in which residents use sounds to structure, interpret and understand their local neighbourhood, and the activities that unfold there, it also includes the preparation of three descriptive portraits that capture the objective or physical characteristics of local acoustic environments. These three acoustic portraits provide an appropriate context or background for the exploration of local residents' acoustic experiences of places. The local neighbourhoods in which the residents live are the places which form the basis for the study. The research focusses on the sounds that residents hear both in the vicinity of their homes and in and around their local neighbourhoods as they go about their daily lives.

Three urban neighbourhoods form the focus for the study: False Creek, Commercial Drive and Ambleside, West Vancouver (Figure 1). These three neighbourhoods were selected for study because of their distinctive mixes of local and citywide sounds, the uniqueness of their built form, and their broader relations to the larger unit of the City of Vancouver and the wider arena of Greater Vancouver. False Creek has recently undergone considerable
Figure 1

Local Study Areas: Commercial Drive, False Creek and Ambleside
redevelopment with its southside transformed into a fashionable residential area. Originally an industrial site for sawmills, and later converted to warehousing, False Creek now forms one of the most innovatively designed residential neighbourhoods in Vancouver, and comprises an 'engineered' social mix that includes residents from a broad range of socio-economic groups. Commercial Drive, by contrast, is an older, well-established neighbourhood of diverse ethnic background. The local area retains a cosmopolitan character that expresses the Southern European and more recently Asian backgrounds of many of the residents. The neighbourhood includes both residential and commercial zones, and is traversed by a number of major transportation routes including the Skytrain which crosses its southern margin. Ambleside, the third study area, forms part of the municipality of West Vancouver, and lies along the north shore of the Burrard Inlet focussing at Fourteenth Street. It lies west of the First Narrows, separated from the City of Vancouver by Stanley Park and the water divide of the inlet. A well-established residential neighbourhood, both residents and visitors alike consider Ambleside to possess what has been variously described as a "village character". High-rise developments, and the recent remodelling of the waterfront commercial zone serve to redefine the local area somewhat, and form part of a gradual move away from this earlier village character.

The study utilizes two methods of inquiry. First, on a descriptive level, the temporal and spatial variations in local sounds and local sound levels are recorded and examined to provide a summary of the local physical acoustic environment. The specific rhythms and patterns of local sounds are documented and described to furnish an impression of the overall acoustic context, while the key morphological and functional elements of the local built environment and local daily routines are related to the acoustic environment. Second, the
characteristic sounds residents hear as they go about their daily lives are identified. The role of individual sounds, or groups of sounds, as regulators or identifiers of everyday life events and activities is examined, and the sounds local residents hear are considered on the basis of the information they provide. The focus on sound as information involves not only an exploration of the more obvious messages individual sounds convey, but also a consideration of the metaphorical or symbolic meanings, if any, residents attach to them. The value or meaning of local sounds, and of local acoustic environments in general, is thus defined for local residents and presented as an integral component of their broader 'sense of place'.

The central aim of the study is to uncover the acoustic experience of place of local residents, and by extension to move toward a greater understanding of local residents' experience of and attachment to the real life places that form the geographic basis of their daily lives. Central to the study is the notion that the human experience of place is indeed a multi-dimensional one, with the acoustic dimension one of the principal contexts within which and through which human understanding of place develops and attachment to place commonly results.

The full range of the human senses is key in shaping the content and nature of human attachments to the world around, with each in their own different way offering a unique perspective on the daily world. Acoustic perceptions and experiences, for example, are radically different from those of the dominant visual mode, just as they are from the lesser researched taste, smell and touch. At a basic level, acoustic experience is predicated on a temporal basis rather than the spatial model of the world gathered through vision. Through their occurrence and recurrence in time, sounds form a vital element of human experience, and contribute to the character of individual places. Experience in the real world supports both the primacy of time and space - with the temporal
dimension perhaps more significant given the human 'interest' in the dynamic flow of events that unfold in time, rather than the more apparently static or fixed arrangements of objects distributed in space.

The temporal nature of sound means that the same place is filled with a variety of sounds that remain in a constant state of flux. At one time, a place may be peaceful and quiet, while at another loud and furious. Through the recognition of recurrent patterns or sequences within this constant change, however, some order may be established, and by extension a sense of place defined. Recurrence and sequence are the key, with the human understanding of, and attachment to, place the product of past experience and understanding. As unique and complex ensembles, places are thus rooted in the past, while growing into the future.

The complex and intimate nature of the human experience of, and attachment to, place calls for a humanistic understanding. The current study reflects this through the development of a theoretical research framework that draws on the findings of both humanistic place research and soundscape studies.

1.7 The Acoustic Experience of Place: A Theoretical Framework

The study is conceptually located in the writings of geographical humanism with its continued interest in people's everyday experiences of, and interactions with, the individual places that provide the geographic framework for their daily worlds. As an extension of the diverse writings of geographical humanism the study also draws on the much smaller body of research that has focussed on the soundscape. While initially developing as separate fields of study, these two realms of understanding have been brought together through recent geographic research into the sonic environment of neighbourhood life (Porteous and Mastin, 1985; Porteous, 1990). The preliminary meeting of these two literatures forms
the research context for the current study, and provides the basis for the fuller and more detailed exploration of the links between the two fields. By way of introduction to this integration, which is explored further in Chapter Two, a brief description of the key components of each field provides the theoretical framework for the current study.

1.7.1 Geographical Humanism

In broad terms, the study forms part of the ongoing geographic interest in people's relationships with the places that form the geographic basis of their daily worlds. The study forms part of the continuing effort by geographers to counter the implicitly dehumanizing influences of positivist thought which serve to reduce the discipline to the study of people as passive objects rather than active subjects. Conceptually, this change in emphasis relies on the rediscovery and reaffirmation of humanistic principles in geographic research. There is a long history of geographic engagement with humanistic concerns, from the 'scientific humanism' of the Renaissance through to the treatment of human agency in some of the early possibilist versions of the regional tradition. While much of this interest was subsumed under the weight of spatial science in the 1950s and 1960s it resurfaced in the early 1970s. In part, this reemergence of humanistic approaches was the result of trends within the spatial scientific tradition itself related to the application of stochastic principles and a parallel interest in human behaviour. The larger failure of spatial science approaches to embrace the complexity of human beings as creative individuals, however, resulted in the growing emphasis on a humanistic critique.

Although the adoption and subsequent reformulation of humanistic approaches during the 1970s has been a fragmented process, mainly because the humanistic label covers a wide range of intellectual positions, two broad areas of
emphasis may be identified. While early humanistic geography assumed the more traditional humanist focus with a concentration on the humanity of the researcher (Relph, 1970; Tuan, 1976), more recent versions of what may be characterized as a 'geographical humanism', have tended instead to focus upon the humanity of the researched, that is the subjects who are the focus of the study (Ley, 1974; Western, 1981; Johnston, 1986).

The fundamental characteristics of this geographical humanism include the focus on the individual as a thinking being with human qualities, rather than as responder to stimuli (Johnston, 1986; Ley and Samuels, 1978). The utility of this geographical humanism includes a greater illumination of the worlds of 'ordinary people' living 'ordinary lives' in specific places and spaces, what Buttmer (1979) refers to as "the drama of life within its environmental setting".

In the exploration of this "drama of life" geographical humanism focusses on two broad areas of inquiry which together form the core of geographical humanism: the experiential aspects of people-place relationships, and the relationships between people in a spatial context (Johnston, 1986). Within both of these related areas of inquiry, the focus of geographical humanism has been on the individual as an activist giving meaning to human existence within a spatial framework, such that space acquires meaning for the individual through shared understandings and experiences developed within people-people and people-place interactions (Jackson and Smith, 1984).

The focus of the current study may be explicitly defined in relation to the first of these humanistic concerns - the experiential aspects of person-place relationships - although to a lesser extent a consideration of people interactions is also included. The overall goal of the study may be conceptualized as an exploration of the manner in which the acoustic cityscape reflects society in general, and place in particular, to the local residents who live there. From an
explicitly geographical perspective, the study of sound within the urban context may be related to questions of human perception, urban form and function and the ongoing interaction between people and place. It, thus, represents a unifying force within the realm of urban studies, while remaining grounded within the humanistic exploration of the 'city as the home of man'. The local soundscape of the urban neighbourhood represents the meeting ground of human intentions and experiences and an environment with economic, political, cultural and physical components. It, therefore, forms part of the complex web of everyday life and experience expressed by urbanization within advanced industrial society.

1.7.2 Soundscape Studies

In addition to the influence of humanistic approaches, the current study also draws on the work of the World Soundscape Project (WSP) at Simon Fraser University. Inaugurated in the early 1970s by R. Murray Schafer, the WSP set out to revitalize interest in the acoustic environment moving away from the traditional scientific approaches of acoustics and physics, and employing the artistic and humanistic approaches of the humanities. The detailed discussion of sound, its physical properties and behaviour, has traditionally been examined within the scientific discipline of acoustics. As part of this scientific approach to the study of sound, the research has centred upon the physical measurement of the behaviour of sound waves within a variety of different mediums, and at a variety of different frequencies and intensities. The result of these studies has been to advance the understanding of the physical behaviour of sound.

Recent studies of sound and acoustic interactions, however, have become critical of the theoretical approaches and scientific methods of traditional acoustics (Truax, 1984; Schafer, 1977a). The major criticisms advanced centre upon the failure of the majority of studies to include the human element in any
form other than that of a receiver in a chain of energy transfers. Theoretically, the behaviour of sound within acoustic studies is conceptualized as a series of energy transfers which originate with a sound source and conclude with the reception or absorption of sound by one or more receivers. Within this framework, the research addresses the mechanics of these transfers, their efficiency and the various factors that intervene to influence them.

The energy-transfer model has also been extended into the realm of psychoacoustics, albeit with its partial reformulation to accommodate the stimulus-response dynamics originally proposed in the work of the nineteenth century physicist Gustav Fechner (cited in Rossing 1990, p. 77). The result of this theoretical extension has been the conceptualization of the human auditory process in terms of an energy transfer model, with individual acoustic experiences considered from a stimulus-response perspective. While some researchers gravitate toward the concept of the 'percept' as the end state of auditory experience, the influence of the psychophysical stimulus-response model remains apparent within the large number of environmental noise studies completed. The majority of these studies summarize the human acoustic experience on the basis of a single response (usually 'level of annoyance') to a specific stimulus (for example traffic noise), which is quantified and presented graphically or statistically. The conclusion generally reached suggests that the larger the stimulus (the 'louder' the noise) the greater the response (the higher the level of annoyance) (Rossing, 1990; Kryter, 1985; White, 1975).

In contrast to this 'view' of human acoustic experience, the WSP has explored the application of a more humanistic approach to the study of sound that places an emphasis on the human interpretation of the sound. The theoretical starting point for this alternative discussion of sound is a focus on sound as part of the process of human communication. This change in focus
involves, on a practical level, the concentration on sound as part of the 'everyday' world of human experience, while at a theoretical level introduces the notion of sound as 'information' (Truax, 1978, 1984; Schafer, 1977a).

This change in emphasis has introduced a study of sound that places at its core the human element. Sounds are not approached solely as energy waveforms, but rather are considered from the perspective of human perception and experience. In support of this alternative conceptualization, a revised theoretical framework for the discussion of sound has been developed through the work of the WSP (Schafer, 1977a, 1977b, 1978; Truax, 1984), and has been most succinctly articulated by Truax (1984) under the title of a communicational approach to the study of sound.

The focus within this communicational approach is on the human experience of sound. The listener, sound and the environment are considered linked through a process of communication. Sound is the key interface between the listener and the environment, and represents a source of information about the environment, its form and function. Sounds are not considered simply as stimuli that evoke a response, but rather are considered as perceptual phenomena capable of being individually perceived and interpreted based on human intention, past experience, and the context in which they are heard.

In this regard, an important distinction may be drawn between the processes of hearing and listening. While the former involves a sensitivity to acoustic energy in the form of sound waves and their vibration (Moore, 1982), the latter involves the "processing of sonic information that is usable and potentially meaningful" (Truax, 1984). Abstracting this distinction to the level of listener-environment interactions, a parallel distinction may be drawn between the sonic environment of a given setting or space which represents the "aggregate of all sound energy in a given context", and the soundscape which
describes the local acoustic environment as it is understood by those individuals who live within it, and thereby in part create it. The listener within a soundscape is part of a dynamic system of information exchange, and not merely a passive receiver, or responder to stimuli, in a field of energy transfers (Truax, 1984).

Sound thus functions as a mediating agent between the listener and the environment, such that the nature of the acoustic experience influences the nature of the interaction of the individual listener with the world around him or her:

[the] acoustic experience creates, influences and shapes the habitual relationships we have to any environment. The relationship may be highly interactive, even therapeutic, but it may also become alienating and both physically and mentally oppressive as in the case of noise (Truax, 1984, p. 11)

The communicational approach to the study of sound advanced through the varied studies of the WSP forms an important theoretical departure from traditional acoustic literature, and a move toward a more holistic conceptualization of human acoustic experiences. Through the explicit focus on the human element, the discussion of sound is raised beyond a concern simply with physical waveforms and energies, and becomes rather an integral part of the broader humanistic concern with the humanity of people living out their daily lives in specific settings.

1.8 Contributions of the Research

In drawing together the varied contributions of geographical studies of place and WSP studies of soundscapes, the current research may best be considered as a further step in the ongoing geographic quest for a greater understanding of the manner in which people both relate to, and ultimately
become attached to or even alienated from the places that form the basis of their daily lives. Although it remains clear that the different places that constitute the geographic basis of everyday life are neither encountered nor experienced as visual phenomena alone, but rather sensed within a rich kaleidoscope of sound, smell and texture, the discussion of these non-visual dimensions within the current geographic literature is limited. Given the absence of an established geographic literature that addresses the role of sound in the human experience of the varied places that form the basis of daily life, the contributions of the current research are both theoretical and empirical, and may be briefly summarized on this basis.

As one of the major research thrusts of the discipline, geographers have sought a greater understanding of the essential nature of human environmental experience and behaviour. While the immersion of people in the world around them has thus been acknowledged as a multidimensional process - the varied facets of this immersion have largely been overlooked with an implicit and explicit focus on the visual dimension of human environmental experience as opposed to the non-visual. In their examination of the crucial question of how the everyday experiences and routine behaviours of individuals transform the spaces of everyday activity into places filled with both meaning and significance, the majority of geographers have done so without explicit reference to the role of local sounds or patterns of sound. By comparison, the current study focusses directly on the neglected acoustic dimension of people-place relationships, and, therefore, sets out to offer a model of the varied components of the acoustic experience of place. As an integral part of the study, the research focusses not on the physical characteristics of sound alone, that is intensity and frequency, but rather on local resident descriptions and impressions of the sounds that they hear in and around the varied places in
which they live. In other words, sounds are considered on the basis of their meaning and significance, and as part of the broader sense of place of local residents, and hence part of the integrated totality of everyday life.

While the study breaks new ground with its focus on sound as an integral component of the experience of place, it also draws on not the realms of personal reflection, the examination of artists' work or literature reviews so common an element of much humanistic research within human geography, but rather explores the concrete experiences of residents living out their lives in real places. This evolution of place research represents an important step in humanistic geographical inquiry as a whole with the research focussed not just on the humanity of the researcher, but also, and perhaps to a greater degree, on the humanity of those researched. Despite the advances made in earlier studies, which are described in detail in Chapter Two, there is surprisingly little research which explores residents' acoustic experiences at the level of everyday life.

This revised emphasis of humanistic geography has obvious implications in terms of fieldwork. One of the specific contributions of the research may also be framed within the pragmatic concern of discovering, or perhaps more accurately, revealing the varied acoustic experiences of local residents. The use of interactive interviews to explore local resident soundscapes represents both a new development in the geographic literature, as well as an extension of the early fieldwork completed as part of the WSP. Despite a series of recent theoretical arguments which advocate their use, there are still comparatively few studies within geographical research which rely on detailed, qualitative methods of data collection and analysis, although their number has gradually increased. Within the small body of soundscape literature, no study of resident acoustic experiences has been completed using detailed interviews, although the framework for such study has certainly been laid by the pioneering theoretical
and inspirational writings of Schafer (1977a) and Truax (1984).

As a final contribution of the research, the traditional humanistic aim of enhancing the humanity of the researcher may also be claimed, although in addition the nature of the research process also dictates the 'increased awareness' of those involved throughout it - particularly the 80 residents who shared their own acoustic experiences during the interview process.

The following seven chapters provide an account of the development of the research and its findings. Chapter Two draws together the varied concepts and thoughts pertinent in framing the research problem and 'putting the study together'. The chapter includes a review of the literature from two major fields: that concerned with the ongoing geographic discussion of place, and that with the world of sound and soundscapes. While this division provides a useful device for ordering the literature and ideas, the recent development of a small body of geographic literature on the exploration of varied 'scapes' which includes soundscapes suggests the development of a preliminary link between previously disparate geographic and acoustic studies. The research methods used are described in Chapter Three. The rationale for the selection of each is summarized, as are some of the challenges faced during the field work, as well as some of the lessons learned. Chapter Four introduces the three study areas through brief summaries of their historical developments, and current forms and functions. This description of each area provides the context for the subsequent discussion of local acoustic environments and resident soundscapes.

Chapters Five and Six are devoted to the presentation and preliminary analysis of the major research findings. Chapter Five presents the objective data gathered for each area in the form of descriptive acoustic portraits. Chapter Six includes the comments of local residents on the sounds they hear as part of their daily lives, with the major differences and similarities within each area drawn
out. Chapter Seven builds on the major research findings of the two previous chapters, and explores more closely the acoustic experience of place. The major dimensions and structures of the acoustic experience of place are conceptualized, and the dominant acoustic senses of place or soundscapes delimited for each area. Chapter Eight includes a summary of the research findings, as well as the presentation of the major study conclusions.
Chapter Two: Sound and Place: A Review of the Literature

2.1 Introduction

In its exploration of the acoustic experience of place, the current study has been informed by both the large body of literature produced by geographers in their ongoing exploration of place and person-place relationships, as well as by the much smaller body of literature developed primarily by acousticians, musicians and, more recently, geographers, which explores the human dimensions of environmental sound and acoustic experience. Although these two literatures initially developed as separate fields they have been recently linked through the work of J. Douglas Porteous. In a series of articles, as well as in a subsequent book, which draws on much of the work previously published in article form, Porteous presents a humanistic framework for the broader discussion of non-visual landscapes, and by extension the human experience of these landscapes in their rich and varied form. With its focus on the acoustic experience of place, the current study attempts to take this link or integration a stage further through an exploration of the links between sound and one of the most fundamental of geographical concepts, place.

The diversity of the literature reviewed in formulating the current study is reflected in the broad scope of the present chapter. The initial focus is on geographical studies of place and the human attachment to place. These subsequently lead into an exploration of more peripheral studies that focus on the acoustic environment and its varied interpretation by scholars from different fields. The wide array of studies reviewed shows something of the enduring nature of place as a focus of geographic study, as well as its diverse interpretations. By contrast, the much smaller number of acoustic environment or soundscape studies are reflective of the relative infancy of this emerging field
of study.

2.2 The Geographic Discussion of Place

Over the last two decades the discussion of place has re-emerged from a relative hiatus during the 1960s, when positivist quantitative methods dominated, to become once again one of the cornerstones of geographic inquiry. The re-emergence of place as a focus for geographic research has, in large part, been a result of the efforts of those geographers associated with the introduction of humanistic ways of approaching human geography, who initially sought to return humankind to the forefront of geographic inquiry, and subsequently to explore the world of experiences.

The title 'humanistic geography' has been used throughout the literature to characterize a diversity of philosophies, methods and individual studies. The development of humanist approaches has taken place in a somewhat fragmented fashion, a product of the diversity of intellectual positions taken up by individual geographers. The varied positions adopted have rested upon foundational philosophies such as phenomenology and existentialism, method influenced philosophies such as pragmatism, philosophies of meaning such as hermeneutics and approaches primarily concerned with principles of inquiry such as 'historical idealism' or 'interpretative sociology'. This fragmented approach has been further compounded by the interest of individual geographers with specific humanists and their work, for example, Seamon (1978) on Goethe; Cosgrove (1979) on Ruskin and Rose (1981) on Dilthey. This diversity of sources, while adding a rich flavour to humanistic geography, makes any analysis of this collection of approaches and philosophies a complex one.

As the basis for an overview of humanistic approaches to geographical study, it is possible to identify a small number of principles or tenets shared by
almost all the individual approaches that fall under this broad heading. Gregory (1986) in the Dictionary of Human Geography, for example, offers the following definition:

An approach to human geography distinguished by the central and active role it gives to human awareness and human agency, human consciousness and creativity; at once an attempt at "understanding meaning, value and [the] human significance of life events" (Buttimer, 1979) and "an expansive view of 'what the human person is and can do'" (Tuan, 1976). (Gregory, 1986, p. 207).

In drawing the varied principles of humanistic approaches together, it may thus be stated that the focus of such approaches rests in the major goal of bringing human beings in all their complexity to the centre-stage of human geography. In part, this focus has been explicitly pursued as a response to the 'peopleless' character of much of the positivist work in the human geography that preceded it.

Within this broad goal of 'peopling' human geography, two distinct components may be identified: the first focusses on the recognition of the humanity of the geographer or researcher, while the second addresses the humanity of the people the geographer studies. In regard to the first of these, attention is paid to the geographer as an individual who enters actively into his or her own research and study; while in the second, an explicit emphasis is placed on the role of human beings 'out there' in the 'real world' as active subjects who perceive, interpret and ultimately shape the human geography of their surroundings. Given the consistent focus of humanistic geography on the concept of place, both have influenced the ongoing geographical exploration of this complex subject.

In regard to the first of these, varied philosophical and methodological
issues have been raised throughout the literature concerning the need to go beyond the traditional 'scientific' concept of the researcher in search of objective truth. Among these issues has been the repeated emphasis on the need for the researcher to recognize all of the implicit values, beliefs and ideals that he or she inevitably brings to the research process. In terms of the second, a new array of subject matters has emerged for human geographers in relation to the focus on humankind in all its complexity. At the heart of this new inquiry, is a focus on how people come to know and act in the local worlds in which they live, reflected specifically in humanistic geography's focus on place and the many ways in which people 'relate' to the places around them. This overt focus on place, and the associated heightened awareness of the intimate, emotional, political and other varied attachments people commonly demonstrate toward the places that contain them have spilled over from humanistic geography to stimulate human geographical inquiry in general. As one result, a series of studies of people and places has developed which may be categorized as part of an emergent and innovative 'geographical humanism'. Although this differs from much of the previous humanistic thought that preceded it, it nevertheless represents an important element within the literature that has the potential to make a contribution to the wider audiences of social science in general.

In reviewing these developments, it is useful to present them in an approximate chronological sequence. The starting point is thus the emergence and emphasis of a self-conscious humanistic geography in the early 1970s that initially centred upon a critique of geography as spatial science and a fundamental reconceptualization of basic geographic concepts including place. This in turn provides a framework for the more recent elaboration of a geographical humanism that has served to bring the intimacy of everyday people-place relations to the forefront of both substantive inquiry and theoretical
reflection.

As an addition to this major emphasis of the literature review a brief summary of recent structurationist conceptualizations of place and people-place relations is also outlined. Although the impact of this separate body of work on the current study remains more limited than that of the humanistic approaches and geographical humanism, some discussion of these related studies is of interest given the specific focus on place as a key element of both theory and research. The review of these varied approaches to the discussion of place, and by extension the relationships between people and the places in which they live, work and recreate provides the context for a review of the much smaller body of literature that has examined the acoustic dimension of such interactions.

2.2.1 'Peopling' Human Geography: The Approach and Focus of Early Humanist Studies

According to Ley and Samuels (1978, p. 8-9) the origins of humanist approaches in geography may be found in the early literature on environmental and place consciousness and include J. K. Wright's pioneering essays on geographical lore, geographical knowledge and geosophy; Lowenthal's epistemological and landscape studies; the historical-cultural explorations of landscape imagery and meaning expressed in the work of Carl Sauer, Donald Meining and Paul Wheatley; Yi-fu Tuan's examination of the physical, psychological, and cultural contexts of place attachments and environmental attitudes; and Clarence Glacken's definitive study of the history of western ideas about people's relationship with nature.

The use of the term 'humanism' or 'humanistic' was established in geographical writings in the 1970s (Tuan, 1971, 1974a, 1976; Mercer and Powell, 1972; Buttimer, 1974, 1976; Harvey, 1974; Entriken, 1976), although it
had been used in isolated cases before this time. The initial embrace of humanistic philosophies and approaches was for the most part a reaction against the positivist emphasis of spatial science. Early humanist studies set out to establish a new emphasis in geographical thought in which the positivistic cast of spatial science was explicitly identified and criticized through reference to varied traditional humanist philosophies, most commonly phenomenology and existentialism. With their anti-positivist emphasis, and associated research procedures, both philosophies required a move away from quantitative, normative approaches to those of a qualitative nature. The initial spark for early humanistic geography was the reductionist view of humankind presented by spatial science, and, to a lesser extent, in behavioural approaches (Entriken, 1976; Olsson, 1980; Cullen, 1976). Numerous geographers, drawing on a variety of humanistic influences, elaborated on the obvious limitations of the positivist concepts of 'rational economic man' or the varied 'stimulus-response models' of behavioural geography (Wallace, 1978; Ley, 1981a).

A second and more dominant theme within these early writings, however, was the emphasis on human values, which were acknowledged as continually bound up or integrated within the efforts of the researcher to explore or understand the focus of his or her research (Buttimer, 1974; 1976). For many early humanistic geographers, the concern was with how researchers almost inevitably 'get in the way' of their own studies, a circumstance deriving from their subjective blindness that prevents them from seeing the real nature of the phenomena under study. In bringing such a perspective, to the fore, Buttmer, for example, drew heavily on the philosophical tenets embedded in Husserlian phenomenology.

For Husserl, commonly referred to as the 'father' of phenomenology (Findlay, 1960, p. 188), the aim was "to disclose the world as it shows itself
before scientific inquiry" (Pickles, 1985, p. 3). In following this philosophy, phenomenologists have commonly conceptualized the major task of their inquiry to be one of getting "back to the things themselves." This is not, however, pursued through the scientific-positivistic assumption that the objects of study simply 'speak' their truths, but rather, through the deeper 'stripping away' of all the assumptions and premises of human minds the outcome of scientific and common-sense understandings of the world. This process of stripping away, or of 'bracketing out', is referred to as the époche or phenomenological reduction (Entikken, 1976; Johnston, 1983), which then provides the researcher with the basis to discover the true essences of objects that reside in humankind's deepest intentional relationship with these objects.

While the pursuit of Husserlian phenomenology remains a strict, demanding project, a number of humanistic geographers did turn to various versions of it in an attempt to define an approach to geographical objects that affirmed the centrality of the human subject in determining the knowledge to be gained regarding these objects (Buttimer, 1976, 1980; Relph, 1970, 1977, 1985; Seamon 1978, 1979, 1980, 1989; Tuan 1971, 1974a, 1974b). This phenomenological geography was used as the basis for relaunching geographical enquiry through a rethinking of basic geographical concepts. Tuan (1971) in his paper on "Geography, phenomenology and the study of human nature" for example, adopted a phenomenological approach designed to reveal the 'essences' of basic geographical concerns present in the deepest psychological, emotional and existential attachments that all human beings hold for the spaces, places and environments that 'encircle' them. This quest remains a consistent theme within Tuan's work, and in his 1976 paper on "Humanistic Geography" he declares the very purpose of this approach to be the description of 'how geographical activities and phenomena reveal the quality of human awareness' (p. 267).
This specific focus on essences and the complex quality of human awareness of geographical concepts is continued in the later works of Relph and Seamon among others (Relph, 1976, 1985; Seamon, 1978, 1979, 1980, 1984b). Relph (1985) in his statement on the role of phenomenological geography—what he terms the 'phenomenology of geography'—argues that "academic geography" is a codification of the more everyday "geographical experience" that everybody has of the world around them. The major goal for Relph is thus to recover the true character of everyday geographical experiences, with a further focus on drawing out what he considers to be the dual senses of "marvel" and "concern" embedded in these experiences. In accordance with this perspective, Relph examines four basic geographical concepts—region, landscape, space and place—that he asserts are not merely concepts for academic geography but also the "contexts and subjects of geographical experience, and in a different aspect again...parts of being-in-the-world" (Relph, 1985, p. 21). Within these concepts, Relph's focus on place includes an emphasis on "place experiences" which he views as "constructed in our memories and affections through repeated encounters and complex associations", and as contributing for almost everyone to a basic feeling for place as "an origin...where one knows others and is known to others; it is where one comes from and it is one's own" (p. 26-7). This does not mean that people always have positive feelings toward the places they were born, those they live in now, or those in which they work. Rather it identifies a basic manner in thinking about place that is substantively different from that represented by the positivistic science treatment of place as a location (a fixed coordinate in space) or a geometric grouping of office buildings, roadways and houses.

This reconceptualization of basic geographical concepts, including place, is echoed throughout the geographical literature in the work of numerous other
authors. The collection of essays edited by Seamon and Mugerauer (1985), for example, reflects the varied efforts of geographers and other academics to re-think some of the basic elements of human-environmental relations including place. Within the essays contained in the volume, varied attempts are made by individual authors to enrich these concepts by drawing on the previously 'taken-for-granted' ways in which people interact with the natural, human and 'sacred' spaces around them. Seamon's essay, as well as those of several other contributors, draw on his earlier work (1978, 1979, 1980, 1984b) in which he calls for a 'geography of the lifeworld' - that is a geography that remains sensitive to the 'preflective' intentionality of the human body demonstrated in every day actions such as walking, watching television or driving a car.

Seamon's version of phenomenological geography includes the presentation of notions such as 'body ballets' and 'place ballets' - of 'habitual body behaviours' organized into 'time-space routines' through which the body itself acquires a distinctive 'sense of place'. From a similar perspective, with a focus on the 'body-subject' derived from the phenomenological writings of Merleau-Ponty, Hill (1985) argues that the 'body-world communion' of blind people provides insight into the notion of a 'holistic environmental knowing' in which the different senses of touch, smell and hearing (as well as seeing) all play an important role in the individuals' geographic experiences of their immediate surroundings. In presenting these varied thoughts, both Hill and Seamon point to the ways in which these basic interactions with surroundings feed into a more 'conscious awareness' of how we all 'encounter' the world through the medium of our bodies, and how in the process we gain a deeper awareness that remains critical to who we are. A further essay included within this volume that explores the essence of space is that of R. Murray Schafer. This particular essay builds on Schafer's earlier work as part of the World
Soundscape Project, and focusses specifically on the concept of acoustic space. Although the literature that focusses primarily on the sound and soundscape is reviewed below, this particular essay provides a useful link between the two literatures, given Schafer's implicit use of phenomenological approaches to reduce acoustic space to its essences, matched by his evocation of a 'marvel' and 'concern' for the acoustic dimension of the everyday experience of different spaces and places.

As a final influence upon phenomenological geographers, it remains clear that both Relph and Tuan draw upon the existential arguments of philosophers such as Buber and Heidegger in their reconceptualization of basic geographical concepts. In this manner, both Relph and Tuan frequently centre their efforts on thinking how, in an existential sense, the very 'humanness' of subjects is bound up with the worldly spaces, places and environments that people cannot help but occupy. For geographers such as Tuan, Relph, Buttimer, Seamon and Pickles, Heidegger's philosophy presents a basis from which to rethink the whole of human geography with an emphasis on place, space and landscape as fundamentally implicated in the 'larger' philosophical questions about the very being of human beings and the worlds of their thought and actions. As Pickles argues, academic geography must follow Husserl's procedures and Heidegger's insights into the spatiality of existence in order that "geography can be a human science of human spatiality" (Pickles, 1985, p. 170).

2.2.2 Geographical Humanism: People and Place

The broad range of humanistic studies framed by both an explicit and implicit reliance upon phenomenological and existential exercises of exploration, not only provided a basis for the rethinking of basic geographical concepts such as place, but also provided the impetus for the more 'empirical'
inquiry into the manner in which ordinary people, living ordinary lives perceive and reflect upon the spaces, places and landscapes they encounter on a daily basis. In this manner, the writings of humanistic geographers moved beyond the realm of the deepest phenomenological and existential connections people have with their places, and provided the basis or initiative for a much larger group of researchers (many of whom would not even consider themselves as humanistic geographers) to examine the everyday and often quite intimate attachments of all sorts of people to the places in which they live.

This emphasis on geographical humanism, rather than a strict adherence to phenomenological or existential approaches to research, represents a significant development within human geography, with the research focus shifting away from a concentration on the humanity of the researcher, or an emphasis on the true nature or 'essence' of basic geographical concepts, toward a greater concentration on the humanity of the subjects (the people studied). For a small group of geographers this shift in emphasis remains problematic. Pickles (1985), for example, argues that the rigours of a phenomenological approach, informed by a deeper meaning of basic geographical concepts, ultimately becomes lost in less formal and ill-defined humanistic studies concerned with the "lifeworld as object" and the study of "everyday mundane experience" (Pickles, 1985, p. 45). Nevertheless, the criticisms of Pickles aside, the shift within the literature toward a geographical humanism forms an important departure for human geographical inquiry and one that opens the door to the exploration of a range of new subjects in a 'host of new ways'.

Through this change in emphasis, humanistic geographers effectively began to address the everyday attachment of people to places while remaining sensitive to the thinking of 'the people' themselves. Such research thus offered the potential for providing insights into emotions and feelings that underly much
of daily life and the contemporary struggles played out in, and organized around, individual places. Through this move toward substantive humanistic geographical inquiries aimed at recovering the structure and detail of everyday people-place relations - the effective basis for a 'remaking' of human geography was secured.

The routes taken by individual geographers within this more substantive recovery of people-place relations vary, with the two broad approaches those focussed toward the realm of highly personal and subjective geographies, and those concerned rather with the irreducibly inter-personal and inter-subjective geographies of social groups, or groups of residents whose shared values, meanings, experiences or ideologies are intimately bound up with the material places of which they are quite literally 'a part'.

For the small group of geographers who have explored the world of individual or personal geographies, the object has been to get as close as possible to the place experiences of individuals living in particular settings or environments. The focus has thus been on intensive research methods used to reveal how individual people interact with the places that encompass them. Early work within this intensive research of people-place relationships includes Rowles' (1978) study of the geographical experiences of five elderly residents living in an inner-city neighbourhood of an eastern American city. In examining the geographic experiences of these individual residents, Rowles (1978) uses 'experiential field work' which involves establishing close, even personal, relationships with the five local residents. A more recent example of this specific focus on a small number of local residents may be found in Rodaway's (1988) study of County Durham village residents which relies on a 'group reflection' process to discover their 'environmental experience', and Dyck's study of motherhood (1988).
In addition to this focus on small groups of individuals by geographers striving to recover the nuances of everyday people-place relationships, a larger group of geographers have directed their inquiries to the recovery of the thoughts and actions shared by people living, working and embracing the places that form the geographic framework of their daily lives. One of the foremost contributions within this specific dimension of humanistic-geographical work has been made by Ley who, while writing on the need for the more sensitive incorporation of human agency within geographic research (Ley, 1977, 1981b, 1982) has also cautioned that "too often the purity of philosophical discourse has run aground upon the rocks of geographic practice" (Ley, 1988, p. 122). Thus, in his research Ley has moved away from an explicit concern with the transcendental 'essences' of early phenomenological writings, and focussed rather on the everyday and usually 'taken-for-granted' meanings of social actions available to social groups in specific social contexts. In practice, as well as in theory, these concerns have resulted in Ley focussing primarily on the urban environment, and examining the relations between residents and the places in which they live, work and play. As the starting point for this interest, Ley's early research on "The black inner city as frontier outpost" (Ley, 1974) provided an important humanistic thrust as he attempted to develop a 'sensitive' account of the events and actions 'taking place' in the neighbourhoods he studied.

Within this early study, Ley's humanistic geography moves away from the strict confines of phenomenology or existentialism and includes a focus on real, complex issues embodied in actual people-place relations. To theoretically ground this shift in emphasis, Ley draws on the constitutive phenomenology of Alfred Schutz: a theoretical position refined by Schutz as part of an attempt to retain the spirit of Husserl's philosophy, but which included a removal of the emphasis on 'essences'. Through this revision, phenomenological inquiry is
recast by Schutz as the study of everyday and 'taken-for-granted' lifeworlds, rather than the probing of these same lifeworlds for the deeper essences of being and existence.

From a humanistic geographical perspective, Schutz's emphasis on 'mundane experience' and the sociality of everyday life, provides the basis for a detailed exploration of the shared meanings and 'common sense' knowledges of local residents who lead similar lives under similar conditions in similar places. While a host of humanist geographers continue to recognize that places as physical assemblages of houses, roads and workplaces contain groups of people whose lives remain very different, and form what may be broadly categorized as specific contexts crowded with 'multiple realities', Schutz's framework provides a basis for the supposition that groups localized in particular places will often constitute similar lifeworlds, with a crucial ingredient of these lifeworlds the local residents' identification with the places that encompass them. Place, group and the lifeworld, thus emerge as three closely linked entities that form the core of humanistically-oriented geography.

This fundamental recasting of humanistic geography, using the philosophy of Schutz as a broad guide, provides the basis for a major thrust within the literature with an explicit focus on, and greater sensitivity toward, the study of people in their places (Western, 1981). This leads in turn to an invigorated pursuit of local meanings and local knowledge based on the experiences of individuals and groups of individuals living their lives out in their local environments or contexts. The emphasis remains explicitly and implicitly upon local affairs since it is theorized that through these, particular places gain both a sense of identity and purpose that, even if little reflected upon and not entirely 'positive', subsequently assumes a central role in local practices and politics.

Jackson and Smith's influential text, Exploring Social Geography (1984),
further echoes this focus on a geographical humanism concerned primarily with people's relations with real life places. Within this text, they draw on the broad literature of humanistic geography in outlining what they characterize as a 'hermeneutic revival' in social geography (with hermeneutics the interpretation of meaning). In this manner, geography, or more specifically social geography, "re-emerges as an exploration of the relationship between people and place, seeking to go beyond empathetic understanding to offer an interpretation of human experience in its social and spatial setting" (Jackson and Smith, 1984, p. 20). Jackson and Smith are thus sympathetic to the reconceptualization inherent with humanistic geography's shift away from the strict philosophical rigours of phenomenological or existential inquiry, and argue for an emphasis on the ways in which communities of people intersubjectively build up an understanding of how their local worlds or places 'work' - an understanding that remains largely implicit but that is explicitly represented in their daily practices and routines. As an extension of this reconceptualization of local worlds and shared understandings, Jackson and Smith further develop what Ley (1981b) had earlier alluded to, namely that these intersubjective understandings ultimately form dimensions of the culture sustained by particular people in particular places. Through this argument, Jackson and Smith effectively serve to link modern social geography with its study of people in places with traditional cultural geography - but now a revitalized cultural geography concerned less with the material artefacts and technologies described by Kniffen and Sauer among others - but rather with the more immaterial modes of thinking and living as expressed in the everyday interactions of people in particular places and initially explored by Wagner (1972, 1974) and subsequently developed by a number of different authors (Cosgrove and Jackson, 1987; Cosgrove, 1989; Jackson, 1989).

A further significant influence within this meeting of social and cultural
geography is the 'interpretative anthropology' of Geertz (1973, 1983). Geertz's approach to culture is broadly 'semiotic' in that he considers culture "as a series of signs and symbols which convey meaning" (Jackson and Smith, 1984; Richardson, 1981; Smith, 1988). Geertz clarifies this meaning with reference to two dimensions: first the meaning conveyed by things, behaviours and beliefs to the people sustaining the culture (the insiders) and second, that conveyed to the researcher (the outsider) seeking to interpret that culture. In the first dimension, Geertz's concept of culture effectively parallels that of Schutz's lifeworld and serves as the basis through which, and by which, people living in specific places make and remake their daily lives. This specific conceptualization of culture suggests the need to pay attention to the detailed geography of intersubjective communication reflected in the varied local meanings, knowledges and experience of peoples in different places.

The second aspect of culture and meaning revolves around the process through which the researcher gains access to these local meanings and significances. In this regard, Geertzian anthropology conceptualizes the task of research as one of both 'reading' and then 'writing' culture. For Geertz, research remains a complex intellectual activity that involves the researcher in a time-consuming and intensive process that involves varied attempts to understand and to represent the worlds of people in terms as faithful as possible to their interpretations. This 'ethnographic' approach to research has most recently raised the interest of a broad array of geographers looking for a new battery of qualitative methods with which to explore the everyday worlds of different groups in different places (Eyles and Smith, 1988; Eyles, 1989; Dyck, 1988).

A further dimension within this increasing focus on the geography of everyday life is the recovery of the alternative tradition of the so-called Chicago
School of urban sociology - with its focus on the conduct of "urban ethnographies" of people living their daily lives. While the Chicago School is most closely associated in the geographical literature with an emphasis on 'ecological' approaches to the study of urban form and function, the work of the school also includes the diverse contributions of numerous individual researchers who literally took to the streets of Chicago to complete detailed studies (urban ethnographies) of the daily worlds of the varied social groups living there (Smith, 1981; Jackson and Smith, 1984; Jackson, 1985). The result of these influences, and the varied philosophical currents that underpin them, is a revitalized human geography that seeks to examine in greater detail the everyday experiences and interactions of people in different places - to develop geographical inquiries into the worlds of all sorts of peoples in all sorts of places.

While humanistic explorations of people-place relations have thus been the subject of much and varied discussion within the literature, they have also been the target of specific criticisms. The criticisms suggest problems relating to the use of eclectic methodologies, obscurantist terms, and most seriously, criticisms of a failure to provide adequate treatment and discussion of either the context or the contextual approaches at work in the everyday worlds of individuals or groups. While it may be argued that criticisms of humanistic geography's failure to address context issues (that is structure versus agency) refer rather to early humanistic studies than later geographical humanism, a brief summary of some alternative strategies for reviewing these relations is appropriate, specifically those couched within structurationist theories.

2.2.3 Structuration Theory and the Discussion of Place

The original elements for a 'structuration theory' may be found in the
writings of a number of authors including among others Berger and Luckman (1967); Bhasker (1979) and Dawe (1970). Within human geography, however, the major influences have been those of the work of sociologist Anthony Giddens, who founded his original thoughts for a 'structuration theory' on a critique of the structural and interpretative sociologies that were connected to, but not synonymous with, the Marxist and humanistic traditions that surfaced in the human geography of the early 1970s.

Reduced to its basics, structuration theory attempts to reconcile the excesses of voluntarism on the one hand and those of structural determinism on the other. In essence, it addresses the duality of structure represented in the notion that social life inevitably exhibits a basic recursiveness, that is, it "expresses the mutual dependence of structure and agency" (Giddens, 1974, 1981; Foucault, 1980). Within this framework, "structure" pertains to the resources and rules manifested as the properties of social systems, which define relations between individuals or groups in terms of everyday social activities. "Agency" on the other hand refers to the dynamic flow of action pertaining to the conduct of individual activity, that is everyday experience and living. The duality of structure expresses the notion that the "social systems are both the medium and the outcome of the practices that constitute those systems" (Giddens, 1979). The relationship between the individual and society, agency and structure is, therefore, a mutually reinforcing one in that although individuals cannot alter structures themselves, society and its structures are produced and reproduced by recurrent individual and joint practices and ideas. Agencies shape structures but are at the same time shaped by them.

Attempts to develop structurationist studies of place include the work of Pred (1981, 1983 and 1984) and Eyles (1985). In keeping with the active conception of human agency adopted by structuration theorists, Pred treats place
as an appropriation and transformation of society. Within this work, Pred incorporates an explicitly geographical dimension to structuration theory through a focus on specific structure-influenced and structure-influencing practices at particular locations in time and space. He achieves this by integrating the ideas and concepts of time geography with those of structuration theory, offering a conceptualization of place as a "historically contingent process". For Pred, every place is essentially a human product. As such, it is inseparable from the production and reproduction processes which create and transform society. As a result, place cannot be regarded as a static, observed on the landscape 'scene' for social activity and interaction. Rather, it is "what takes place ceaselessly, what contributes to history in a specific context through the creation and utilization of physical setting" (Pred, 1984, p. 280).

Place within this perspective is, thus, regarded as an unbroken flow of local events, with an emphasis placed on the natural continuity of both the people who participate in the process as well as any of the humanly made objects employed in such time-space specific practices (Pred, 1984). Place within Pred's perspective is a process whereby reproduction of social and cultural forms, the transformation of biographies and individual life-paths, and the transformation of nature constantly become one together. Within this framework, emphasis is placed on the explication of institutional and individual practices, as well as the structural features with which these practices are interwoven. Thus, people are treated not only as producers or occupants of a landscape, but rather are regarded as integrated objects and subjects that are coincidentally 'becoming' with their milieu. Pred's focus on the becoming of a place has been most succinctly expressed in his study of the changing nature of places in the Swedish province of Skane (Pred, 1985; 1987) in which he directly engages structuration theory and applies it to the study of real places:
Process-participants are regarded as integrated human beings who are at once objects and subjects and whose thoughts, actions, experiences and ascriptions of meaning are constantly becoming, through their involvement in the workings of society and its structural components as they express themselves in the becoming of places (Pred, 1985, p. 338).

In addition to the work of Pred, a further attempt to operationalize structuration theory with reference to place is Eyles' (1985) study of local resident 'senses of place' in a small South Midlands English town. Within this study, Eyles (1985) concludes that sense of place is not merely a phenomenon that exists in the minds of individuals, but one that develops from, and becomes part of, everyday life and experience. In terms of structuration theory, Eyles (1985) emphasizes "the insoluble nature of the relationships between the conduct of life, and the forms and the structures it produces" in respect of the place experience. For Eyles (1985), the individual's experience or sense of place is not merely concerned with feelings about place and places, but is also implicitly related to the individual's "place-in-the-world". Where people live and what they think about where they live, are thus but one dimension of everyday life and experience. Experience or sense of place cannot, therefore, be interpreted and understood in isolation, but rather place experiences, as with other experiences must be considered as part of, related to, and implicated in, the totality of life.

These studies aside, however, analyses of place and place experiences using structurationist theory are limited, with the difficulties involved in operationalizing the theoretical arguments problematic. As Pred (1984) concludes:

...nobody identifiable with the structuration perspective has succeeded in conceptualizing the means by which the everyday shaping and reproduction
of self and society come to be expressed as specific structure-influenced and structure-influencing practices occurring at particular locations in time and space (p. 281).

Despite this difficulty, however, many of the basic concerns expressed within structuration arguments relating to the duality of structure and agency are relevant to geographical writing. Giddens’ opposition to any single-minded attachment to overly structure-oriented or overly agency-oriented accounts of social life stand as a relevant marker for human geography.

While the varied influences of geographical humanism and to a lesser extent those of structuration theory have led to a fundamental revision of person-place relationships, with an associated focus on the everyday experiences and intentions of people in different places, specific dimensions of this relationship still remain only briefly considered. From the standpoint of the current thesis, two related areas may be identified which demand further attention: first, a consideration of the particular elements that contribute to the specific character or atmosphere of individual places for the local residents who live there, and, second, an examination of the nature and range of the human experience of these places. Conceptually, these two related areas of inquiry may be located within the broader goal of developing a deeper understanding of both the identity of place and local residents' identification with place (Relph, 1976).

2.2.4 The Character of Place

A small number of humanistic studies have explored the varied dimensions of place, although primarily in conceptual or general terms (Buttimer, 1980; Casey, 1990; Norberg-Schulz, 1985; Relph, 1976; Tuan, 1974a; Walter, 1988). More specific studies have focussed on the varied ambiances or character of individual places that, because of their history or natural environment, evoke a
strong or intense sense of place. Norberg-Schulz's (1980) phenomenological explorations of Prague, Khartoum and Rome represent one attempt to capture the essence or particular character of each of these major cities. Yet what remains clear is that the majority of places in the world do not possess the striking physical character or physical presence of major cities such as Vienna, Paris or London. At the same time, as Relph (1976) and Lewis (1979) suggest, individual places are commonly characterized by an intangible, atmospheric quality or sense of place that ultimately contributes to the experience of them.

Preliminary attempts have been made to explore these varied dimensions of places, but these remain isolated and are commonly theoretical rather than empirical (Seamon, 1979), or included as incidental references to the study of some other facet of place and people-place relationships. The small number of empirical case studies completed take a broadly humanistic approach, with the most common emphasis being on the phenomenological qualities of individual places. Burgess' exploration of the Fens region of eastern England, for example, (Burgess, 1982), centres around an attempt to identify the essential qualities of the region, and further to "encapsulate the sense of place felt by inhabitants and visitors" (p. 39). Burgess concludes that the key qualities of the Fens are geographical isolation, aspects of the human-made landscape, and environmental exploitation.

At the smaller scale of the town, Violich (1983, 1985) similarly explores the sense of place of four Dalmatian coastal towns of the former Yugoslavia. Violich's study centres upon an 'intuitive reading' of the landscape as a "text" which enables him to identify the qualities of the natural and human-built environments that ultimately contribute to the character or sense of each town. In spite of certain shared features such as similar size, population, architecture and natural vegetation, Violich suggests that a key to the differences of the four
towns may be found in varying land-sea "interphases", which he outlines in terms of four metaphors: "urban arena," "ladder," "open arms," and "urban ship." Violich's discovery of these metaphors is grounded in the careful process of observation and reflection, with his varied insights recorded in both written and graphic form. Such an approach draws primarily on the phenomenological methodologies, specifically those embodied in the main phenomenological vehicle of 'intuitive insight' (Polkinghorne, 1983; De Rivera, 1984). At the smaller scale still of the public square, specifically one Venetian public square, Dozio et al (1983) again draw upon a qualitative, descriptive research process to examine the dynamics and character of the physical place itself through an exploration of the socio-spatial workings of the person-place interface.

2.2.5 The Human Experience of Place

In addition to this focus on the character of specific places, a similarly small number of studies have further explored the related dimensions of the human experience of place. Approaching the study of the experience of place from a humanistic perspective, one consensus of these studies remains that the significant aspect of environmental experience is indeed its multidimensionality. Such experience thus involves a complex variety of bodily, emotional, and intellectual 'intentionalities' which reach out into the world as it is both actually and in imagination. These multi-facted intentionalities serve to immerse people in their local worlds in a host of ways. Within the humanistic and behavioural literature three particular dimensions of the relationship have been defined: bodily (instinctive and habitual), emotional (affective) and intellectual (cognitive) - all of which form an integral part of the human experience of individual places.

In traditional environmental psychology and perception literature the focus
has been primarily on people's cognitive relationship with the environment (Golledge and Simpson, 1987; Moore, 1979). This focus has been fundamentally shaped by Lynch's pioneering study "Image of the City" (1960), in which he identifies five physical elements as significant in the identity and structure of the city: paths, edges, districts, nodes and landmarks. These constructs were derived empirically from subjects' cognitive maps of urban areas familiar to them.

The central aim within such studies has been to understand how qualities of the physical environment promote environmental clarity and legibility, what Lynch refers to as "imageability". Reviews of the research suggest that these five elements remain stable across varied urban settings for different groups of subjects (Nasar, 1989; Evans, 1980), although there remains some uncertainty about the relative importance of particular constructs in the cognitive learning process, and by extension the negotiation of familiar and unfamiliar places by subjects (Appleyard, 1976; Evans, Marrero and Butler, 1981; Nasar, 1988a). Behavioural studies have further suggested evidence of individual differences in urban cognition (Evans, 1980). Lower-income residents have been found to have "less extensive" maps than do higher-income residents; children proceed through a series of developmental stages from route knowledge to a Euclidean coordinate system; and men were sometimes found to have more developed mental maps than women. Almost certainly, these variations result from differences in environmental experience rather than any deepseated cognitive differences - with interactive experiences with the environment enhancing the development and accuracy of cognitive or mental maps.

While the cognitive maps of users and residents of specific places are important facets of the experience of places given that the information presented broadly indicates what people believe the structure of their place to be, and thus
provides an intellectual picture, albeit a stereotypical one, of individual places (the map is also a reflection of the respondent's familiarity with this particular mode of expression). The reliance solely on the cognitive dimension of environmental experience, however, is from the perspective of place experiences an incomplete one. The comments or thoughts of an individual on a place may not represent a complete picture of its environmental meaning or significance. Humanistic approaches to geography, for example, have questioned the philosophically idealist tradition of behavioural approaches embodied in the belief that environmental behaviour is solely a function of cognition. In questioning the cognitive conception of place and environment relationships advanced by behaviourally influenced researchers, humanistic geographers have looked primarily toward two further structures of human experience namely the 'habitual' and the 'affective'. Within individual humanistic studies of person-place relationships, the emphasis placed on these alternative structures of human experience varies, although in the majority of cases the focus is on a more holistic or broad conceptualization of human environmental experience, which remains grounded in the broader philosophical emphasis that underlies such studies.

The influence of phenomenological thought is reflected most explicitly in those studies that examine the habitual or instinctive structures of place experience. From a strictly phenomenological perspective these habitual or instinctive dimensions of experience are commonly summarized under the notion of the 'body-subject' after the work of the French phenomenologist Merleau-Ponty (1962). Within this structure of human experience, particular importance is placed on the notion of the 'body' as intelligent subject. The precognitive power of the body to undertake meaningful behaviours, and in so doing to function as a kind of pre-reflective subject, often categorized as
habitual or sub-conscious behaviours, is thus a feature of a small number of phenomenological geographic studies (Casey, 1990; Hill, 1985; and Seamon, 1980).

The focus on the body-subject provides insights into the habitual and routine aspects of everyday life, and suggests one framework for a more informed understanding of how a large portion of people's daily activities and routines unfold almost automatically with only a minimum of cognitive attention or awareness. From a humanistic perspective, it may be argued that the body-subject dimension of person-place interactions remains a fundamental one given the presentation of specific places as environments or settings that are familiar or fundamental elements of the individual's daily worlds.

A third dimension of environmental experience explored within the literature is that of the affective or emotional domain. The emotional or affective links residents develop toward particular places form a significant sub-theme within humanistic geography, with the varied dimensions of emotions identified extending from the more habitual emotional links to everyday places to the aesthetic, spiritual and religious feelings extended to specific holy or religious sites or spaces (Eck, 1982; Engel, 1985; Saile, 1985; Brenneman, 1985; Philo, 1989).

Within this varied literature, the most commonly identified emotional link with place remains that of some form of identification with and even protection of a given place, embodied specifically in 'emotions' such as fear, aggression and defence. From an environmental psychology perspective, this link has been classified under the heading of 'territoriality' - embodied specifically in the identification with and protection of place (Malmberg, 1981). From a humanistic perspective, this 'label' is viewed as too reductionist in nature, with the resulting relationships considered to extend beyond this focus alone and
include a range of emotional links with place that include attachment, love, responsibility and nostalgia. Humanistic geographers have, therefore, classified this attachment in varied terms including "at-homeness" (Seamon, 1979) and "topophilia" (Tuan, 1974b). Tuan (1974b) refers to topophilia as "all of the human being's affective ties with the material environment." For Tuan, topophilia extends to include dimensions such as physical contact, familiarity, patriotism, and aesthetic application. For Seamon (1979), "at homeness" refers to four aspects relating to emotional intentionalities (appropriation, regeneration, at-easeness and warmth) plus a fifth related aspect (rootedness) which is linked to body-subject intentionalities (Altman and Werner, 1985). Emotional links with place, particularly the habitual emotional dimensions, once forged, stand out as one of the most significant bonds holding people in particular places - despite their seeming unattractiveness to outsiders.

Individual studies within the humanistic literature have also explored the 'deeper places' of experience relating to the spiritual qualities of place. Phenomenologically, individual authors have alluded to the notion of sacred space (Eliade, 1961; Graber, 1976), with a small number of studies examining the essential spiritual qualities of particular places. Both Brenneman (1985) and Saile (1985), for example, examine the religious significance of specific places for the local residents who inhabit them and in many ways create them. Brenneman (1985) focusses on Ireland's holy springs, more commonly called "wells", while Saile (1985) explores Pueblo dwelling and place in the southwestern United States.

While the human experience of place, and by extension the attachment to place, has received growing attention within the literature, one area of limited attention is that of the varied dimensions of this experience. This absence is surprising given both the multisensory nature of environmental experience and
interaction, as well as the varied atmosphere, environmental qualities or ambience of given places which is commonly related to the character of the place itself. As Seamon (1989) asserts "environment is probably the structure most often responsible for the uniqueness of a place".

Among the small number of studies that consider the many dimensions of the place experience, Moncrieff (1975) examines the multimodal ways in which the South African Bushmen encounter and understand their desert environment, while Seamon (1984b) explores the heightened emotional experience of nature, drawing on the works of the Romantic poet William Wordsworth. The most concerted effort to explore the multidimensionality of environmental experience is that of J. Douglas Porteous who in his 1990 work Landscapes of the Mind explores through both empirical study and literary inquiry the varied "worlds of sense and metaphor". In the preface to his book, Porteous asserts that "we are, at root, alienated from our sensual and imaginative possibilities" (p. xiv). He subsequently addresses this alienation through the exploration of a series of "scapes" (for example, soundscape, smellscape, and bodyscape) which provide some indication of the multifaceted nature of human interactions with and links to the landscapes in which we live.

Porteous grounds his explorations within traditional humanistic concerns in geography relating to "aspects of human consciousness, the sensations and perceptions that contribute to experience and by which a person makes sense of his environment." He summarizes the aim of the book as being to raise questions about the "human condition in the late-twentieth century Western world" and by so doing to add to "the reader's burden of awareness" (p. 17). From the perspective of the current study, however, the acoustic dimension of everyday life, and more specifically that of the experience of different places still remains a research area that has received only limited attention within the literature. It is
the literature that examines the acoustic dimension of the multisensory world that is considered next.

2.3 The Acoustic Dimension

In addition to its debt to the geographical literatures that examine the concept of place and peoples' daily relationships to or with places, the current study also draws on the much smaller body of literature that explores the acoustic dimension of everyday life and experience. With the exception of a small number of pioneering studies, the discussion of the acoustic dimension of everyday life represents a relatively recent development in both the acoustic and geographical literatures. Until recently, academic interest in the acoustic environment has been dominated by highly specialized, problem-specific noise research. Initial interest in noise research arose in the late nineteenth century when loud noises were first considered an occupational hazard (Barr, 1886). From these turn of the century origins, the volume of literature has expanded considerably, especially during the last 25 years.

The majority of noise studies follow a similar strategy, with the basic objectives two-fold: first the physical measurement and description of noise levels, and second, the development of statistical models to examine or predict the responses of the population exposed to them. The results of the research include a number of statistically derived indices which indicate the "acceptable" noise levels for a combination of specific environments, time periods and noise sources (Kryter, 1985; White, 1975; Robinson, 1971; Kryter, 1959).

The effective domination of the acoustic literature by noise research has resulted in two major weaknesses in the discussion of sound and human acoustic experiences. First, noise studies are concerned with only the negative aspects of the human response to sound and do not consider the full spectrum of human
acoustic experience. Second, the majority of noise studies conceptualize sound as either energy or as a stimulus that evokes a response. The sonic environment is thus treated as an object that may be reduced to either a single measurement or a series of measurements, while human responses or behaviours are predicted on the basis of probable reactions to different noise levels in a simple cause-and-effect relationship.

While the energy transfer model provides a framework for the measurement and examination of noise, it represents a limited view of sound. Interpreted in humanistic terms, the acoustic environment is not an object that may be reduced to a series of measurements based on intensities and frequencies alone; rather, as Porteous and Mastin (1985) suggest:

"It is taken to comprise a vast array of stimuli, each representing a wealth of information capable of producing a variety of environmental experiences (p. 170)."

Most noise studies fail to observe this subtlety, however, and consider sounds as noise strictly on the basis of the properties of the sound, generally intensity and frequency (Salmon, 1973). This method of analysis thus overlooks the definition of noise from the human perspective of 'unwanted sound', and as a result is unable to distinguish qualitatively between different sounds. As Truax (1978) concludes, noise studies:

"Isolate sound from the way human beings understand it. In any of these measuring systems, no matter how sophisticated, one sound is treated similar to any other sound. In other words, any such device or system treats sound as a signal to be processed, instead of information to be understood (p. vi-vii)."
The intellectual response to the noise study may be found in the soundscape literature which remains grounded in a communicational approach to the study of sound (Truax, 1984). The soundscape literature has a humanistic and holistic focus in that it 'places' the listener centrally in the process, instead of at the end of a chain of energy transfers. As part of this focus, the acoustic environment is considered the product of a vast array of sounds each of which represents a wealth of information for the listener and has the potential to provide for a variety of environmental experiences. Within this framework the soundscape represents the acoustic environment as understood by those residents who live within it and, in part, help create it. It thus represents a perceptual phenomenon and is not readily reducible to a series of physically measured parameters. In more general terms, the soundscape may be considered as analogous to the visual landscape (Porteous and Mastin, 1985), and thus by extension has a fundamental geographical basis.

It was the Finnish geographer Grano (1929) who completed the first soundscape study. In this pioneering study, Grano describes and illustrates cartographically the diverse sounds of the rural landscapes of the eastern Finnish Island of Valosaari. As an integral part of his larger study entitled "Pure Geography", Grano's focus was on the anthropocentric sonic landscape - that is, the sonic environment of the receiver of the sound. Within this environment Grano distinguished between two major fields (influenced by distance in the visual field) the field nearest to the observer, and the visible distant surroundings. Through his subsequent descriptions based on his own perceptions of local sounds (the researcher as 'pure' geographer) Grano provided a summary of the varied elements of the surrounding agricultural sonic landscape. In so doing he placed a particular emphasis on the important role of aural impressions in developing the concept of advancing time.
In much later Finnish work, once again in agricultural landscapes, Ohlson (1976) builds on these initial conceptualizations of Grano. He repeated Grano's earlier division of the sonic environment into proximate and distant zones, with the addition of a variable 'transitional' zone. He also included scientific measurements and analyses of local sounds using sound level meters and analyzers. Ohlson's (1976) physical descriptions of local sonic environments were complemented by a preliminary analysis of their changing structure. Specifically, he identified increasing sound levels, the product of farm mechanization, as a common occurrence, and one that threatened the acoustic character and balance of rural environments.

Interest in the urban acoustic environment was initiated by Southworth (1969). In a pioneering study of the sonic environment of Boston, Southworth describes the variety and character of perceived city sounds, and subsequently considers their influence upon the perception of different urban spaces. As part of this research, Southworth relies on a unique field experiment in which selected respondents were blind-folded, wore ear defenders or had access to both of their major senses as they toured previously selected city locations. He concludes that sound is a vital component of the urban experience, and that sonic design or planning should not be overlooked within the urban development process.

The most detailed and developed discussion of acoustic environments to date may be found in the work of the WSP originated and coordinated by the composer R. Murray Schafer. One of the major goals of the WSP has been to:

Discover principles and develop techniques by which the social, psychological and aesthetic quality of the acoustic environment or soundscape could be improved (Truax, 1978, p. 126).
The contribution of the WSP to the acoustic literature is extensive. It includes the conceptualization of a theoretical framework for the discussion and exploration of sound and soundscapes (Schafer, 1977a; Truax, 1978), and the development of an appropriate terminology and set of techniques for the study of sound. The most comprehensive of the WSP's varied publications is Schafer's book *The Tuning of the World* (Schafer, 1977a), which includes a conceptual overview of soundscape studies and draws also on Schafer's other musical and creative endeavours.

The work of the WSP includes the advancement of a series of conceptual acoustic constructs which serve to categorize individual sounds beyond the descriptive framework of merely their origin or source. According to this conceptual schema, the smallest self-contained acoustic element, as defined by the human ear, is termed a "sound event". Schafer describes a sound event through the use of a two-dimensional strategy. While the first dimension charts the characteristics of what are termed the attack, body and decay of a given sound event, the second refers to its frequency, fluctuation, relative duration and overall dynamics (Schafer, 1977a).

The further consideration of the soundscape on the basis of a figure-ground orientation has resulted in the identification of three fundamental components of local acoustic environments: 'keynotes', 'sound signals' and 'soundmarks'. Keynote sounds form the ubiquitous referents of a given setting and represent the equivalent of the "ground" in the "figure-ground" relationship. These sounds are so-named because they form the key or tonality of a soundscape and represent the background against which other sounds are heard. Keynotes are those sounds which are heard constantly, for example, the hum of traffic, or the hiss of air-conditioning, and are thus not consciously perceived. If they are consciously listened to, then they may become figure sounds and function as
sound signals.

By contrast, sound signals represent sounds that function as acoustic warning devices, or sounds that attract attention to themselves. Bells, clocks and sirens represent the possible sources of sounds that function in this manner, and thus remain in the foreground. As a type of sound signal, soundmarks represent particularly noticed or unique sound signals which have gained some special status as a result of their association with either a given event, time period or activity. The acoustic equivalent of landmarks, these sounds have the potential to serve as identifiers of place, both social and geographic.

As a complement to these theoretical and conceptual advances, the work of the WSP also extends to include two empirical studies: The Five Village Soundscapes (Schafer 1977b) and the Vancouver Soundscape (1978). While the former explores the varied soundscapes of five specially selected European villages, the latter provides an overview of the soundscape of the city of Vancouver. Despite the varied nature of the research focus, both studies report upon the gradual loss of soundscape diversity and identity as a result of the introduction of, or increase in, the intensity and volume of modern technological sounds particularly those associated with traffic flows.

The reawakening of geographic interest in the soundscape may be found in the study of an urban neighbourhood in Victoria, British Columbia by Porteous and Mastin (1985). Drawing on the theory and methods of the WSP, the authors explore the local soundscape through both subjective and objective means. To this end, tape recorders, sound level meters and a 'trained listener' are all used to define the major components of the local soundscape. A social survey was also included to determine resident understanding of and attitudes toward the local acoustic environment. The major conclusions of the study emphasize that although the modern urban acoustic experience is frequently one of 'overload', at
the same time, it is also one of sensory deprivation, with the pervasive flat-line sound of both foreground and background traffic flows masking other 'smaller' sounds.

In broader terms, Porteous and Mastin's study represents but one element of a much larger humanistic exploration of a variety of 'sense scapes' by Porteous which includes individual articles on Smellscape (1985), Bodyscape (1986a), Inscape (1986b) and Deathscape (1987). Within these individual studies, as well as his subsequent book (Landscapes of the Mind), which brings the individual articles together as part of a larger conceptual model of geographical experience, Porteous emphasizes the multidimensional nature of human environmental experience, and by extension the richness of the world around us. Through these explorations Porteous not only expands the already broad domains of geographic research, but also adds new dimensions to the traditional geographic concerns of environmental perception and the nature of the taken-for-granted everyday lifeworld advanced in the earlier works of Buttimer (1974) and Seamon (1979) among others. From the standpoint of the current study, Porteous and Mastin's exploration of the soundscape, with its reliance upon WSP theory and methods represents the preliminary link between geographic and acoustic research, and a point of departure for future study.

Aside from the work of the WSP and Porteous and Mastin, additional research into soundscapes and the human experience of environmental sound is limited, although a small number of isolated studies have been completed. Hawkins (1980), for example, in research completed at The Institute of Sound and Vibration in Southampton, England examines the acoustic experiences of residents of small villages in the south of England. Hawkins considers residents' uses of environmental sounds as sources of information about local events or activities. He collected his data through a community sound survey delivered in
interview format. His findings indicate that a sizable portion of residents use specific sounds as sources of information about their local areas, and in so doing orient themselves to developments around them.

In two further creative ventures, Hamayon (1980) and Pocock (1987) probe small dimensions of the acoustic dimension of everyday urban life and experience. Drawing on the methods of the WSP (Westerkamp, 1974; Truax, 1978), Hamayon documents the results of an eight and a half minute 'soundwalk' from the Place des Victoires to the Place Andre Malraux in Paris; while Pocock presents in audio-cassette form a "sound portrait" of the cathedral city of Durham in northern England. In his soundwalk, Hamayon draws upon his own architect-author background to provide a detailed and graphic account of the variety of streetscapes and soundscapes encountered along the way. Pocock, in his study of Durham, uses the traditional humanistic strategy of immersing himself within the local acoustic environment, so that the latter might almost be said to 'speak to him'. In both studies the creative research strategies of the researcher serve to present a personal portrait of the diverse acoustic environments of two unique settings.

In one final example of geographic interest in the study of acoustic environments, Kariel (1980; 1990), in an extension of traditional noise research, examines the response of recreationists to selected sounds within the outdoor environment. Kariel's findings, however, are influenced more by WSP frames of reference than traditional noise studies. He thus concludes that a number of factors, interrelated in a complex manner, influence people's evaluation of, and response to, individual sounds. In his analysis Kariel groups these into two categories: those that relate to the physical characteristics of the sounds themselves, and those that relate to their socio-psychological aspects. In his subsequent discussion of these, Kariel emphasizes the structural importance of
the context in which the sound is heard in influencing the listener's response, and hence links his study back to the communicational model of the WSP.

The small number of soundscape studies, as may be anticipated given the infancy of the field, thus leave many questions relating to the nature of human acoustic experience unanswered. While conceptually the humanistic and communicational foci of soundscape studies suggest the ultimate links between people, space and sound, the varied dimensions of these links have yet to be fully addressed. The focus on the semantic and affective properties of sound, introduced through the work of the WSP, suggest numerous areas for geographical research given the discipline's traditional focus on the human experience and understanding of varied environments and spaces that form the basis of people's daily lives. The richness of the acoustic dimension, its basic environmental nature and its fundamental role in the human experience and condition suggest its central importance to the geographer in his understanding of the world. It is part of this understanding that forms the basis for the current study. As detailed in Chapter One the focus is on the role of sound in the human understanding of, and attachment to, the places that form the basis of daily lives, namely the places in which people live, and often spend the majority of their non-working hours. While the study of sound may well be approached from the point of view of the social scientist, artist or humanist with resulting emphases on different aspects of its distribution, aesthetic or experiential nature, the current research retains a humanistic flavour that matches both a large portion of the geographic place literature, while remaining consistent with the holistic and human focus of the WSP. In support of this particular approach to the study of sound, the specific research methods used as part of the study are outlined next in Chapter Three.
Chapter Three: Research Design

3.1 Introduction

The extensive geographic literature on place as well as the more limited number of geographic and acoustic studies that consider soundscapes have informed the current research. The major purpose of the study, namely an exploration of the acoustic experience of place, requires a research design that builds on the theory and findings of both fields. The meeting of a humanistically oriented study of place with an acoustic study of soundscapes extends the research frontiers of both fields, and thus presents an opportunity for the researcher to explore new avenues in research design, and approach his study with a pragmatic or even artistic bent.

Drawing on the theory and findings of humanistic studies of place, the increasing emphasis within the literature is on research designs that are sensitive to the experiences of people as they go about their daily lives, albeit within the context of the broader structures that influence all of human life and interaction. Such research aims to understand the everyday realities and experiences of people as thinking and feeling human beings who make sense of the world around them. The researcher does not set out to construct the world anew, because an order or meaning already exists which the researcher must recover and present. The researcher explores people's lives from their own perspectives. Inevitably, the recovery of these meanings and experiences becomes an exploratory and intensive process, which may best be embraced through intensive qualitative methods which reveal the everyday realities that exist for people regarding their daily lives. The focus of study is increasingly on the 'mundane' or 'taken-for-granted' details of everyday life, since these form the most intimate basis of human experience and action.
The researcher does not, however, enter the study devoid of theoretical notions or concepts, but rather relies on theory and literature to clarify and define research problems prior to data collection. Within the resulting research process the researcher remains 'open' to new insights and interpretations through the evidence of the material collected. Findings are not prematurely slotted into abstract categories, but rather the experiences and views of the research subjects guide the subsequent interpretations and conceptualizations that develop.

The small number of soundscape studies place a similar humanistic emphasis on the acoustic experiences of individual listeners as the key to understanding the soundscapes of individual settings or environments. These listeners' experiences are in part contextualized through a further description and capture of the acoustic properties of the same settings and environments. Thus, objective measurements of the physical properties of sounds and composite acoustic environments provide a context for the greater exploration and understanding of the experiences of listeners. The focus in soundscape studies, however, in the manner developed by the WSP, and followed here, is on sound as information and not sound as a stimulus that evokes a given response.

With its connection to both place and soundscape studies, the research design developed here draws on the research methods of each. A qualitative, exploratory research method that centres on the everyday experiences of residents in the local contexts that form their homes reflects the common humanistic focus of both literatures. Added to this, however, are acoustic portraits drawn from sound levels and sound descriptions that present a broad picture of the varied acoustic environments in which residents live and interact. Considered together, they provide the basis for two things: first, an understanding of the daily acoustic experiences of residents living in three Vancouver area neighbourhoods; and second, the development of a theoretical
framework for the acoustic experience of place that outlines the basic structures and varied dimensions of that experience. The research methods, thus, provide the basis for the collection of data which show how sound is involved in local residents' understanding of and attachment to the places that form the basis of their daily lives.

3.2 The Acoustic Experience of Place: A Framework For Study

A variety of research designs characterize place research. Despite this variety, however, the majority of studies draw primarily on some humanistic approach, and, thus rely upon a research design that is post-positivist both in nature and intent. Not surprisingly, there has not been complete agreement over the use of particular approaches to either the study of place, or place experiences, within the literature. Relph and Tuan, for example, disagree over the use and application of the phenomenological method (Relph et al, 1977), while Jackson and Smith (1984) dismiss it as a rather outmoded source of inspiration, and Pickles (1985) and Seamon (1989) present spirited arguments in its defence.

Place studies, influenced by structurationist arguments, specifically those of Giddens (1979; 1984), express further dissatisfaction with traditional humanistic epistemologies, and by extension their modes of inquiry. In response to these criticisms, researchers have proposed alternative research frameworks that include explicit statements on the dialectical relationships between agency and structure which unfold at any given place or locale (Pred, 1984; 1985; Eyles, 1985; Dyck, 1988; and Agnew, 1989). Despite the clear theoretical articulation of structurationist arguments, however, the practical operationalization of them using specific research techniques or methods has been, and continues to be, problematic (Pred, 1985).
As a parallel development to structurationist arguments and approaches, geographers on both sides of the Atlantic have recently drawn on interpretive approaches to human geographic research. According to Ley (1988) the interpretive approach remains:

concerned to make sense of the actions and intentions of people as knowledgeable; indeed, more properly it attempts to make sense of their making sense of the events and opportunities confronting them in everyday life (p. 121).

In the formulation of interpretive approaches to geographic study, the specific research methods used by individual scholars may be summarized as intensive, interactive and qualitative, although the practical definition of these characteristics in individual research designs varies. Nonetheless, despite some obvious differences in the methods used by individual researchers, the overall research strategies associated with an interpretive approach mirror many of the research designs traditionally associated with humanistic research in general, and more historically, or specifically, with those methods and field techniques developed and implemented as part of the work of the Chicago School under Robert Park in the 1920s and 1930s.

That many of the methods of data collection and analysis used as part of an interpretive approach to geographic research are similar to those of the Chicago School is not surprising given the links, albeit often neglected ones, between research of a humanistic nature and the work produced by the Chicago School. While the intellectual debt of humanism is frequently attributed to nineteenth century German and French philosophy (Johnston, 1986; Ley and Samuels, 1978), its methodology finds a more appropriate history in the Chicago School of Sociology (Smith, 1981; Smith and Jackson, 1984). Thus, in the use of
specific research methods such as participant observation, in-depth interviewing and the generation of "thick descriptions", contemporary humanists embrace an interpretive approach that revives or revisits many of the same research strategies and techniques employed by the scholars of the Chicago School in their ethnographic studies of selected social groups and their everyday lives (Anderson, 1923; Zorbaugh, 1929; Wirth, 1928). Similarly, through the use of an inductive approach to data analysis and interpretation which draws generalizations from information presented in case studies through a process of refinement, abstraction and typification, or categorization, individual scholars seek to remain close to the data themselves and, thus, utilize a method of investigation and understanding which aims in the words of Geertz (1973) 'to draw large conclusions from small, but very dense facts" (p. 28).

As a parallel to this, the acoustic studies which have similarly influenced the current thesis and its research methods also retain an implicit humanistic focus both in their discussion of sound, and by extension in their discussion of sound-listener relationships. Their methods of data collection and data analysis reflect this focus and share many of the characteristics of humanistic place research designs including an intensive focus, the use of interactive and qualitative methods, and a concentration on the human element (Southworth, 1969; Schafer, 1977a, 1978; Hamayon, 1980; Porteous and Mastin, 1985). In addition to the collection of qualitative data, however, the majority of acoustic studies also make use of quantitative aggregate data. Such data have characteristically been gathered primarily as a context or starting point for the collection of more interactive or qualitative data, and hence the exploration or investigation of substantive relations (Schafer, 1978; Porteous and Mastin, 1985). In using the quantitative data as a base, soundscape studies to date seem to retain a certain bias of geographic research, that a norm may be established
against which to judge variability. This study does not depart from this approach, for it offers a comforting assurance of a 'basis in fact'. The researcher recognizes the bias in this approach, and aims within the present study to point towards other possible bases of understanding soundscapes as they may be generated in a developing methodology such as he employs here.

3.3 Research Methods

As a reflection of the methodological insights drawn from previous work, the current research strategy represents an integration of research designs from both place and acoustic research. The specific methods used are framed by the guiding notion of research as a process of exploration. In accordance with this particular conceptualization of the research process, the methods of data collection and analysis are designed not to construct reality anew, but rather to gain an understanding of it as 'what is out there'. The conceptualization of the research process in these terms rests on the humanistic proposition that it is not appropriate to impose an order on the outside world because an order already exists (Pickles, 1985; Eyles, 1989; Husserl, 1972).

From a practical perspective, the implications of this particular conceptualization of the research process extend to the specific methods of data collection and analysis used which must enable the researcher carefully to construct reality through an understanding of how people act and give meaning to their own lives and to the places that form the basis of them. In addition to the search for and acceptance of definitions and meanings of the world as provided by the individuals or groups under study, however, the researcher must also attempt to clarify and reveal the taken-for-granted assumptions and viewpoints that underlie or provide the basis for them. The researcher, thus, seeks not only to recover meanings, but also to provide a framework for their subsequent order
and interpretation which makes use of theory, previous work and the various insights gained throughout the research process (Eyles, 1989).

By extension, the adoption of this approach to research has, as Rock (1979) points out, implications for the specific research techniques used which must "neither mirror nor mine reality", but rather work "towards its manufacture" (p. 193). Such a process of 'manufacture' also implies an emerging interpretation of an ever changing world, a deduction which has further implications for the validation of the research itself.

Given the nature of the current research, and that of the research questions posed, the specific research methods used are qualitative and intensive both in terms of their approach and design. While numerous descriptions of just what 'qualitative' is, and conversely what it is not, have been presented in the literature (Harré, 1979; Sayer, 1984; Eyles, 1989), the nature of qualitative research, and by extension its difference from research of a quantitative nature, has been most succinctly summarized by Sayer and Morgan (1985). In brief, Sayer and Morgan (1985) argue that the difference between qualitative and quantitative research relates primarily to the specific research design used. On this basis, they distinguish between intensive research on the one hand (qualitative) and extensive research on the other (quantitative).

Within extensive research, the research questions posed focus primarily on the identification of common patterns, regularities, or the distinguishing features of a population. The types of relations investigated are those concerned with similarity, while the common outcome of the work is a descriptive generalization of specific phenomena, objects or relationships. The methods of data collection used to investigate these relationships include the survey of sample populations, the use of formal questionnaires and the delivery of standardized formal interviews. The most common method of data analysis
involves some form of statistical testing. The results of the research include ‘representative’ generalizations, although the findings are unlikely to be generalizable in a strict sense to other populations at different times and places, although broad comparisons or contrasts may be made. From a critical perspective, the use of extensive research methods produces work which frequently lacks explanatory power and further runs the risk of ecological fallacy if excessive reduction is pursued.

By contrast, the focus shifts within intensive research to a consideration of how a process works within a particular case, or a small number of cases, the identification of the individual factors that produce change, and the examination of what individual agents do or do not do. The relations explored are more substantial with a preliminary move toward the examination of connections between specific agents, objects and phenomena. The product of intensive research is, thus, an exploration of the production or development of specified objects, events or processes, although explanations are not necessarily representative in a statistically generalizable or normative way.

The research methods used to examine relationships as part of an intensive approach focus on the study of individual agents in their causal contexts, and involve the use of interactive non-formal interviews, participant observation and the generation of ethnographic or "thick descriptions", the product of qualitative analysis conducted within an inductive framework. While the findings are not representative in a statistical sense, the relations described may reasonably be expected to be found elsewhere, given that the mechanisms or structures that generate them extend to other times and places.

The strategies for data analysis and interpretation are primarily inductive, with the identification of substantive relations or connections explored through a process of refinement, abstraction, and typification. Findings at the onset of the
data analysis are acknowledged as preliminary, and continue to be reconsidered as the research unfolds and the data are examined (Eyles, 1989; Dyck, 1988). The theory derived from such research is based primarily on the observation of one section of reality and is conceived not in terms of logical deductions, but rather on the basis of observed relations (Glaser and Strauss, 1967). As a result, the theoretical premises developed are contextual and less general than theories that relate, for example, to the internal structure of the city or central place theory. The use of intensive or qualitative methods in human geography is not new, and has been the mainstay of many humanistic studies. Ley’s (1974) pioneering study of Philadelphia; Western’s (1981) penetrating analysis of Cape Town’s District Six; and Porteous’s (1989) revelatory inquiry into the “planned death” of Howdenseyke all represent examples of the use of qualitative or intensive approaches, that have, in their own unique ways, had some influence on the current research design.

3.4 The Methods of Data Collection

The field research within the current study involved two major phases of data collection: first the collection of data on the acoustic environments encountered in each of the three neighbourhoods, and, second, the exploration of the acoustic experiences of local residents. In support of these two major thrusts the research also includes a third component, the brief description of the history and geography of each study area, to provide an appropriate context for the subsequent analysis and interpretation of the acoustic data collected.

The research involved an ongoing process of data collection, analysis and interpretation. Thus, after the first phase of data collection on the acoustic environment of each of the study areas, a preliminary round of data analysis was performed to provide the basis for the formulation of the second research phase,
namely resident interviews. The research strategy was consistent both with the approaches used in qualitative research in general (Hammersley and Atkinson, 1983; Dyck, 1988), and with place and acoustic research in particular (Schafer, 1977; Seamon and Mugerauer, 1985; Ley, 1988), where the processes of data collection, analysis and interpretation develop alongside each other to ensure a research approach sensitive to the specific needs of the study itself. This approach differs considerably from the a priori defined and structured research method that characterizes positivist research, with its focus on the formation of research hypotheses and their subsequent acceptance or rejection based on the data collected. In brief form, the methods of data collection used within the current study, and the rationale for their selection, may be outlined as follows.

3.4.1 Capturing The Acoustic Context

The starting point for the exploration of the acoustic dimension of place must involve some initial attempt to capture the salient features of the local acoustic environment. While past experiences, intention and frame of reference shape resident experiences of the acoustic environment, they are not conceived in isolation from a physical acoustic context. Thus, to assist in the exploration and understanding of local acoustic place experiences, some summary of the local sonic environment is required.

Despite the need for such a review, the analysis or description of acoustic environments is still in a formative stage of development, a result of the comparative youthfulness of such studies. The complexity of the external acoustic world, given the multiple acoustic events and interactions that take place there, allied with the non-continuous and episodic character of many sounds, make its capture and summary difficult. The prospect of arriving at intelligent conclusions regarding the complex and dynamic acoustic
environment of large urban areas or neighbourhoods in a brief period of time is not good (Schafer, 1978). Methods for the description and classification of different outdoor acoustic environments require many refinements before the development of definitive ‘sound portraits’ is feasible. Such improvements in research techniques and methods will only result, however, through empirical field studies such as those which the current study employs. One contribution of the current research is, thus, some advance in the 'thorny' area of capturing the character and flavour of local acoustic environments.

Despite the formative stage of research into the character and structure of local acoustic environments, significant progress has been made through the pioneering work of the small number of scholars associated with the work of the WSP. The work of the WSP includes the formalization of a series of strategies for the description of acoustic environments which have subsequently been empirically tested and validated through field studies (Schafer, 1977a; 1978; Truax, 1978; 1984).

In addition to the work of the WSP, earlier attempts to capture and categorize the acoustic environment of a specific area or locale include those of Grano (1929), Southworth (1969) and Ohlson (1976). All three of these studies utilize some form of cartographical technique to record and document the acoustic limits of particular sounds. In addition to the delimitation of acoustic horizons, Southworth (1969) also differentiates between areas of considerable acoustic variety, and conversely spaces that are sonically uninteresting.

While the cartographical representations of these early researchers provide valuable summaries of the acoustic horizons of specific sounds, they represent a transformation of what is essentially an aural and temporal phenomenon into a visual and spatial one. The result is a fundamental abstraction of the acoustic environment. The world of sound is one of the events and activities that exists
within a temporal dimension. Conversely, the world of vision is one of objects, shapes and forms whose order is inherently spatial. The documentation of the acoustic world in visual terms, thus, results, by necessity, in the loss of its temporal dimension, except to the extent it can be imaginatively retained or recreated by the student of sound.

To overcome this problem, the WSP has pioneered the introduction of a series of measures designed to capture the 'illusive' temporal dimension. The specific measures used include the systematic measurement of sound levels (both on the dB(A) and dB(C) scales) with a focus on diurnal, weekly or seasonal variations, allied with the introduction of sound counts, and soundwalks (Westerkamp, 1974), the latter conceptually similar to the Lynchian "walk around the block" (Lynch, 1976). The work of the WSP also bears the imprint of the musical background of its major contributors including Schafer and Truax. The emphases of this particular training provides them with a sensitivity to sound which may escape scholars immersed more in the visually oriented fields of the traditional social sciences. Both the techniques and ideas of this group of pioneers have strongly influenced the acoustic studies which followed (Porteous and Mastin, 1985). The current study is no different, and has further benefited from access to WSP materials, and the participation of one of the key players involved in the WSP, Barry Truax.

While the data collection strategies used in the first phase of the research are outlined next, it must be emphasized that despite the initial focus on the description of local acoustic environments in each of the three study areas, the major purpose of the study is not to provide an in depth analysis of the sonic environment of the three neighbourhoods, or of the city of Vancouver as a whole. Rather, the study uses the brief description of the variety, intensity and rhythm of local neighbourhood sounds to provide a framework or context for the
subsequent exploration of resident acoustic experiences.

The research captures the temporal and spatial character of local acoustic environments in each of the three study areas first through the measurement of overall community sound levels, and second through the compilation of a record of individual sound events. These two approaches follow the precedents set by previous soundscape studies (Schafer, 1977b; Truax, 1978; Porteous and Mastin, 1985). A sampling framework was developed for each neighbourhood that took into account both spatial and temporal factors. Thus, in each study area a spatial sampling framework was delimited based on hexagons 100 metres in radius. An acoustic monitoring position was established toward the centre of each hexagon, away from obviously redundant monitoring sites such as the centre of major intersections, and in settings that reflected, for the most part, the character of the hexagon itself. Based on this standardized spatial framework, 13 monitoring locations were identified in the Commercial Drive area, 14 in False Creek and 14 in Ambleside (Figures 2 to 4).

To document the dynamic component of the local acoustic environment, a temporal dimension was also added to the sampling framework. Eighteen sets of readings were completed at each monitoring location covering two weekdays and one weekend (Sunday). At each site, sound level readings were taken six times a day starting at 07:30 and finishing at 22:00. To reduce the impact of extraneous climatic variables on the readings taken (Truax, 1978), data were not gathered during periods of rain or high winds. Similarly, to minimize the effects of seasonal variations on local acoustic environments, all sound level readings and sound descriptions were made during the “off-season” months of March and April 1990.

Eighteen sets of readings were taken at each of the 41 monitoring sites. One set of readings consisted of two three-minute duration sound level meter
Figure 2

Commercial Drive: Sampling Framework

Monitoring Locations

1. Grandview Park
2. 1700 Block Kitchener
3. 1600 Block Kitchener
4. 1500 Block Commercial Drive
5. 1700 Block First Ave
6. 1600 Block First Ave
7. 1800 Block Commercial Drive
8. 1700 Block Fourth Ave
9. 1600 Block Fourth Ave
10. 2100 Block Commercial
11. 1700 Block Seventh Ave
12. 1600 Block Grandview Highway
13. Broadway and Commercial
False Creek: Sampling Framework

Monitoring Locations
1. Henlock Court
2. Alder Bay Court
3. Alder Crossing
4. Island Park Way
5. Forge Walk
6. Ironwork Passage
7. School Green Road
8. Charleson Park (by the lake)
9. Charleson Road
10. Sawmill Way
11. Millbank Yard
12. Wheelhouse Square
13. Spyglass Place

0 100 meters

N
Figure 4
Ambleside: Sampling Framework

Monitoring Locations
1. 1200 Block Marine Drive
2. 1400 Block Bellevue Avenue
3. 1500 Block Argyle Avenue
4. 1700 Block Argyle Avenue
5. Seawalk, Nineteenth Street
6. 1400 Block Clyde Avenue
7. 1300 Block Equick Avenue
readings, one each on the dB(A) and dB(C) scales. The decibel is a unit measure of a sound’s power or intensity level. The decibel scale is a logarithmic scale with each intensity level a comparison of one intensity to another (Truax, 1978). The large range of sound intensity to which the human ear is sensitive ranges from the threshold of hearing at 0 dB to the threshold of pain at 120 dB (Table 1). Sound level readings were averaged to provide an overall sound level. Specific peak level sounds were also noted during the same time period and documented separately. Sound levels were measured both on A-weighted and C-weighted scales to identify the specific low-frequency component of local acoustic environments which is included in the C-scale measurement. The set of readings for each monitoring site were completed by a third three-minute listening period during which time the specific sound events heard were noted on the basis of their source. Prior to the measurement of sound levels, and the documentation of individual sound events, the physical characteristics of each of the monitoring locations were described using WSP site description sheets (Appendix One).

In addition to the physical measurement of sound levels, and the notation of specific sound events, at the spatially and temporally defined monitoring locations, a further record of the composition and character of neighbourhood acoustic environments was developed and transcribed through a series of “soundwalks” (Westerkamp, 1974; Truax, 1978). The soundwalk is an interactive research design for the collection of acoustic data not only on the acoustic environment itself, but also on the researcher's interaction with it. Through a soundwalk, the researcher establishes a relationship with the environment around him, based on “intense listening”, and thus becomes involved with it. Westerkamp (1974) describes the inspiration for the soundwalk as the traditional “Sunday walk” which was “born and evolved as one of the
Table 1

Average Decibel (dBA) Levels of Some Common Sounds

<table>
<thead>
<tr>
<th>Sound Description</th>
<th>Average Decibel (dBA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold of hearing</td>
<td>0 dB</td>
</tr>
<tr>
<td>Rustling Leaves</td>
<td>20 dB</td>
</tr>
<tr>
<td>Whisper</td>
<td>30 dB</td>
</tr>
<tr>
<td>Quiet Home</td>
<td>40 dB</td>
</tr>
<tr>
<td>Quiet Street</td>
<td>50 dB</td>
</tr>
<tr>
<td>Conversation</td>
<td>60 dB</td>
</tr>
<tr>
<td>Loud Singing</td>
<td>75 dB</td>
</tr>
<tr>
<td>Automobile (25 feet)</td>
<td>80 dB</td>
</tr>
<tr>
<td>Motor Cycle (30 feet)</td>
<td>90 dB</td>
</tr>
<tr>
<td>Diesel Truck (30 feet)</td>
<td>100 dB</td>
</tr>
<tr>
<td>Power Mower (3 feet)</td>
<td>107 dB</td>
</tr>
<tr>
<td>Chainsaw (3 feet)</td>
<td>117 dB</td>
</tr>
<tr>
<td>Amplified Rock Music</td>
<td>120 dB</td>
</tr>
<tr>
<td>Jet Plane (100 feet)</td>
<td>130 dB</td>
</tr>
</tbody>
</table>

Adapted from Truax (1978)
gestures by which urban man attempted to regain contact with nature”. As the approximate acoustic equivalent of the Lynchian “walk around the block” (Lynch, 1976), the soundwalk provides the researcher with a dynamic experience, albeit a brief one, of the omnipresent and vibrant character of local acoustic environments. A total of three soundwalks were completed in each of the three study areas. The walks were completed on weekdays and on weekends, and followed routes based on the monitoring sites previously identified (Figures 5 to 7).

The subsequent data analysis, completed as part of the first phase of data collection, was similarly primarily descriptive. The researcher summarized the information gathered in each of the three neighbourhoods and presented it in aggregated and disaggregated form. Descriptive statistics and narrative summaries were used to present a summary of the findings, and used as a basis for the development of local acoustic portraits that captured the character and structure of local acoustic environments.

3.4.2 The Exploration of Local Resident Soundscapes

Within the second phase of the research, the focus shifted from description to an exploration of the neighbourhood acoustic world from the perspective of the local residents. The conceptualization of the local soundscape as a human creation, which, in this regard, differs from the objective sonic or acoustic environment provided the starting point for this phase of the research. While the sonic or acoustic environment of a neighbourhood represents the objective summary or classification of the sounds recorded there, the soundscape represents the sonic environment as perceived and understood by those residents who live within it, and who, in part, help to create and shape it (Schafer, 1977a; Truax, 1984). As the acoustic equivalent of the visual landscape, the soundscape
Figure 5
Commercial Drive: Soundwalk Route
Figure 7
Ambleside: Soundwalk Route

listening point

0 100 meters
forms an important component of, and context for, everyday life and social interaction (Smith, 1987). In short, the soundscape of a given setting or place represents the meeting ground between human intentions and experience and an environment with economic, political, cultural and physical dimensions. The soundscapes explored in the current study form part of the complex web of person-environment interactions that unfold in the contemporary urban setting.

The conceptualization of the soundscape in these terms demands a humanistic research design. The current study employs such an approach through the use of in-depth interviews to gather the acoustic experiences of local residents. Two rationales informed the selection of in-depth interviews as the primary method of research. First, as Cosgrove (1978) and Tuan (1975) state, and Seamon (1989) reiterates, it is difficult to uncover an individual’s thoughts and feelings about the everyday world or his experiences of it. In embarking on the painstaking exploration of the everyday world of people’s daily life experiences, the researcher enters a complex and dynamic maze of inquiry, and must tread cautiously. The construction of place as a centre for meaning, attachment or even alienation, for example, is rarely self-conscious. Rather, this fundamental human association or relationship is invariably the unintentional product of everyday activities and routines, carried out with neither deliberate thought nor self-conscious articulation. Its exploration, therefore, demands a research strategy that searches beneath the surface, and moves beyond initial impressions or objective summaries, to construct a reliable account of the “lived” experience.

Second, the difficulties in exploring the everyday world and experiences of individuals or groups are heightened still further when the aural component of such experiences forms the focus of study. Although sound remains a fundamental component of human experience and interaction, its description
and exploration is not a simple exercise because of its presentation as a largely non-verbal phenomenon (Pocock, 1989; Truax, 1984). People frequently encounter great difficulty in expressing either their thoughts or feelings relating to sound. Similarly, the academic researcher, unlike the composer or musician, must struggle to rise above the shackles of the written text to capture and communicate such relations and feelings. Sound and music may in fact hardly be separated (Pocock, 1989), and the seminal works in the field of soundscape research have been those of musicians and composers such as Schafer and Truax (Schafer, 1977a; Truax, 1978; 1984). Indeed, their language and terminology commonly reflects their academic and artistic duality. Nevertheless, despite the difficulty and complexity of exploring the acoustic dimension of local residential life and experience, the use of in-depth interviews provides some basis for insights into the acoustic dimension of everyday neighbourhood life.

The structure and format of the interview as a vehicle for study and data collection within social science research varies (Porteous, 1988; Donovan, 1988; Cornwell, 1988). The interaction with, and questioning of, interviewees takes many forms that range from detached formal survey-type instruments which use multiple-choice checklists and closed questions to spontaneous discussions with key protagonists inserted or staged as part of a participant observation process. Moser and Kalton (1971), in a useful typology, divide the process of interviewing, and thereby the interview itself, into two basic types: formal and informal.

Within the formal interview, questions are asked and the answers recorded in a standardized form. It is assumed that the researcher already knows that which the interview is designed to uncover. Through the use of this knowledge, allied with the pilot testing of the interview itself, the researcher must ensure that the questions are phrased unambiguously, and that they do not intimidate
any respondent. The questions must be understandable, and the standardized answers meaningful from the perspective of all the respondents.

While the use of such standardized question and answer schedules are useful for eliciting information of a routine nature, they tend to force replies into particular categories which respondents may or may not have thought about. In addition, they also tend to assume an unproblematic relationship between words and deeds and the ready expression of thoughts and feelings on the issues raised. Responses may further be complicated by individuals wishing to emphasize their adherence to perceived good or positive responses.

By contrast, within informal interviews the questions asked, their sequence, and structure are not determined prior to the interview. Rather, the interviewer tries to tailor the wording of the questions for each interviewee, and to ask the questions in an order appropriate for the individual interview. The aim is to ensure that the question meaning remains the same for all interviewees, and to engage in conversational interactions with the respondent that help maintain a relationship of trust and ease. As part of this interview strategy, the researcher must function as an empathetic listener and yet also remain a good conversationalist. In addition, the researcher is further invested with the key role of social theorist who must link emergent responses and meanings to the broader body of knowledge.

Despite the apparent informal nature of the interview strategy, the researcher does not approach the research without a broad interview framework in mind. He maintains a general outline of the key areas to be explored with all respondents. Thus, while the interview is informal, it is not without direction. Rather, the more flexible structure enables the researcher to address key areas or interests as they arise within the flow of the conversation, and to develop them accordingly. The conversational nature of the interaction allows the researcher
to explore, in a non-threatening way, more sensitive areas and to seek clarification and substantiation of key points or ideas. Informal interviews allow the recording of specific aspects or dimensions of everyday life. In addition, and from a humanistic perspective, they further enable people to describe and talk about their lives in their own words. Such an approach is essential for understanding in much of social science research, for as Cottle (1978) argues:

Without allowing people to speak freely we will never know what the true meaning of their words might be (p. 12).

On the basis of Moser and Kalton's typology, the interview strategy used within the current study was more informal than formal. The researcher framed each interview around a series of predetermined question areas (Appendix Two). He developed these question areas through insights from the initial phase of data collection, the review of relevant literature, and a preliminary pilot survey of the acoustic place experiences of undergraduate students. The sequence of questions within each key area was designed to establish the parameters of specific acoustic experiences or perceptions first, and then to explore them in greater detail. The use of the supplementary question, "Why is that?", added a further reflexive dimension to the interview that both helped the respondents to clarify their thoughts and feelings, and the interviewer to determine better the intentions of individual respondents, as well as the strength and conviction of the sentiments or experiences expressed.

Toward the end of interview, the researcher invited respondents to listen to a sample of sounds recorded in their neighbourhood, and asked if they could identify them. A second set of recordings of street and park sounds from across all three study areas followed, from which respondents were asked to select the sound recordings made in their local area. Sound recordings were incorporated
as part of the interview to help respondents overcome some of the difficulties faced in verbalizing their own acoustic experiences. The soundscape literature includes a brief discussion of the value of drawing on respondents' aural recognition of sounds as a basis for their discussion rather than their ability to verbally evaluate them (Truax, 1984). Such a strategy more closely resembles the nature of human acoustic experience itself which ultimately rests on the cognitive recognition and interpretation of specific patterns of sound rather than their translation into verbal expressions.

In addition to the discussion of the specific sounds residents hear, and their thoughts and feelings toward them, the initial portion of the interview was used to explore the respondents' feelings about the neighbourhood, their daily lives there, and to gather some personal information about them (the latter of which was frequently collected either during or at the end of the interview). After each interview was complete, and during the interviews where appropriate, the researcher made notes on the manner in which the interview was conducted, the level of interest or conviction of the interviewees, and their general attitude to, or involvement in, the interview process. These notes, which included specific quotes when captured, were assembled and carefully transcribed at the conclusion of each interview to provide as complete a record as possible of the interactions that took place.

Using this approach, 80 in-depth interviews were completed during the months of April, May and June 1990. Within each study area, two respondents were selected from within each of the hexagons which formed the basis for the objective measurement of the acoustic environment using a random walk methodology (Hoinville and Jowell, 1977). Residents were selected for interview by house, or housing unit, with each home in the hexagon assigned a number. Starting at the centre of each hexagon, random numbers were, thus,
used to determine how many homes to 'count off' in a similarly randomly selected direction. Discounting the hexagons whose extent was defined totally by either park or water, 26 residents were interviewed in each of the Commercial Drive and False Creek areas, and 28 residents in Ambleside. In the event of interviewee refusals or unavailability, the researcher selected alternative respondents from within the same sample hexagon. To allow for the best chance of catching residents at home, the majority of interviews were completed either in the early evenings or on weekends, with household members over 18 years of age considered acceptable interviewees. To avoid a gender bias, male or female household members were asked for on an alternating basis in each of the three study areas. The majority of the interviews were completed inside the respondent’s home, although a small number took place in outside locations such as the interviewee’s yard (garden), patio deck or balcony. Anonymity was assured, and hence the names of residents presented in the examples discussed later have been changed to disguise the identity of the respondents.

While the method of interviewee selection was systematic, the major sampling objective was not to generate a statistically representative sample of respondents, but rather to interview a structured sample of residents in each neighbourhood, and to explore their own unique acoustic experiences of place. The nature of the interviewee selection process, allied with the request to talk with respondents at some length about their lives and acoustic experiences, contributed to a high rate of resident refusals, close to 50 percent. This high rate of refusals, although anticipated, resulted in interviews taking place with residents who either wanted to or had something specific to say about sounds (or more frequently noise) in their neighbourhoods. While this introduces some bias in terms of representativeness, it also ensures that respondents have some
opinion that may be tapped. This process of interviewing respondents who may have something specific to say about sound mirrors that of previous soundscape research, in which particular 'earwitnesses' have been sought out who are willing or able to discuss their acoustic experiences and more usually acoustic memories (Schafer, 1977a; 1978).

Notes taken were transcribed immediately afterwards to prevent the loss of the 'small items' or nuances generally overlooked in traditional social survey methods. Information collected in this way was used to construct an interview transcript, or text, which was complemented by a supporting set of notes on the context or nature of the discussion. The research adopted this strategy of note-taking both during and after the interview in recognition of the importance of note-taking as part of the research process. As Burgess (1982) observes, note-taking is essential to the research process, and marks the beginning of analysis and theoretical discovery. Indeed, within the current study, interview notes included the provisional identification of themes and conceptual notions that began to shape the data collection process. The research process was, thus, interlocking and recursive, based on the cyclical collection, analysis and interpretation of data which ultimately led to a greater understanding of the specific relationships under study.

The relationships identified between specific variables were deduced from insights gained during the entire research process which were substantially highlighted or heightened during the interviews. The approach aimed at the identification of the themes, patterns and activities which provided the basis for, or key factors in, residents' personal and shared acoustic experiences. Data analysis, therefore, involved a process of moving back and forth between the interview texts, and the abstractions of those texts; between interviewee descriptions of their acoustic experiences and the subsequent conceptualization
of those experiences; between the complexity of residents’ everyday acoustic reality and the researcher’s simplification of that reality; and between the circularities, interrelationships or interdependencies of resident soundscapes and the ordered synopsis or description of them.

While the above summary provides a review of the research design used in the data gathering phase of this study, some comment must also be made about the overall impact of the research approach and its relative strengths, weaknesses and unanticipated outcomes.

3.5 The Research Design: A Concluding Word

Glaser and Strauss (1967) describe the researcher as a “highly sensitized and systematic agency” who may grasp insights at any time during the research process (which may be) the product of experiences gained before or during the study. The key to successful research, thus, rests in the ability of the researcher to remain both “sensitized and systematic”. With this ideal in mind, it must be acknowledged that within any research design there are by necessity particular advantages and disadvantages to the specific research methods used. That the research design fit the problem at hand, and that some discussion focussed on the research experience itself so that methodological findings may be outlined, remains essential.

In summary of the field experiences gained as part of the current study two general observations may be made. First, in regard to the collection of objective data on the acoustic environment of any given setting, it must be acknowledged that the capture of the acoustic profile is both a complex and time-consuming process. The measurement of sound levels, while sufficient to provide data on one dimension of the acoustic environment, cannot in the absence of additional information on the frequency, timbre and rhythm of individual sounds provide
anything more than a pale description of what remains a multi-faceted and
dynamic component of, and context for, the everyday world. The ever-changing
spatial and temporal horizons of individual sounds make the comprehensive
synopsis of the acoustic environment of any neighbourhood problematic. At
best, abbreviated descriptions of the key acoustic characteristics of individual
events may be the product of such work, which may then be used as a basis for
research of a more humanistic nature.

Second, in exploring the acoustic experiences of individual residents the
researcher must tread carefully. The everyday acoustic world is one of habitual
experience and sensation. These are not easily expressed except by the most
articulate or sensitive of listeners. The researcher must, therefore, develop a
suitable context or framework which will enable respondents to express to the
best of their ability, their experiences and feelings. In creating or setting this
context the researcher must remain sensitive to and cognizant of:

the hesitations and indecisiveness that plague human beings who must
decide and act in the complexity and shifting demands of the real world
(Tuan, 1973, p. 411).

While the preparation of such a context is vital to effectively capture the
acoustic experiences of different individuals, it nevertheless demands
considerable resources on the part of the researcher.

Many early studies of a qualitative nature were conducted in small
homogeneous cultures or societies, often non-urban. The modern research
context is frequently one of diversity in which sophisticated communication and
transportation systems have allowed the individual to rise above the geographic
and socio-cultural confines of a specific location or community. Numerous
authors have discussed the difficulties of refining traditional qualitative
methodologies, developed for more bounded research settings, to the dynamic contexts of the modern urban world (Eyles, 1988; Cornwall, 1984 and Dyck, 1988). The consensus is that through the use of innovative approaches to data collection, a strategy which frequently involves a combination of specific methods, progress may be made. In the current exploration of local residents' everyday acoustic worlds and experiences the combination of in-depth interviews with the mechanical and objective measurement of sound levels and notation of sound sources provides one vehicle for qualitative study.

Finally, the role of the researcher as an agent of change, through the act of the research process itself, cannot nor should not be overlooked. The greater understanding of self, as the research process unfolds, is an integral component of study from a humanistic perspective. Through the use of in-depth interviews, however, this increased awareness and self-realization, is also possible for the interviewee, who is frequently asked to focus for the first time on a part of his or her daily life that has been 'taken-for-granted'. One product of the interviews completed as part of the current study, for example, was the interviewees' increased awareness of both sounds and their local soundscapes. Interviewees themselves reported this when they commented on their own experience of "really thinking about sounds for the first time". This self-realization and increased acoustic sensitivity or awareness on the part of interviewees forms, in true pragmatic terms, one outcome of the research itself. It further represents one more important step toward the WSP goal of encouraging people to actively listen to their world:

Listening is our only means of contact with the sound environment, and if it is not practised and kept sensitive, we will lose, both individually and culturally, all of the human benefits it can provide. Careful listening leads to questions about what we hear and an evaluation of its usefulness, interest and beauty - or lack of the same. In an age where noise is an ever present
danger and technology is powerfully used by commercial interests to influence our minds and behaviour, critical evaluation of what we hear (as well as what we see and read) is an indispensable ability that needs to be encouraged in everyone, but particularly the young. (Truax, 1984, p. 96).
Chapter Four: Commercial Drive, False Creek and Ambleside: Historical Development and Geographical Setting

4.1 Introduction

Commercial Drive, False Creek and Ambleside are three contrasting neighbourhoods embedded within the Greater Vancouver area. While they bear some imprint of the wider patterns and forces that have moulded the development of Vancouver itself as a major urban centre, they each possess their own individual histories, through which one may gain an understanding of the social worlds and geographic landscapes encountered there today. The following three cameo reviews provide a brief insight into the geography and local history of each area. These are the backdrops against which the local acoustic environments are framed, and within which the daily acoustic experiences of local residents are set. They, thus, set the scene for the description of local acoustic environments presented in Chapter Five, and the subsequent exploration of resident soundscapes outlined in Chapter Six.

4.2 The Commercial Drive Area

4.2.1 Introduction

The Commercial Drive neighbourhood forms part of the "local area" of Grandview-Woodland as defined by the Vancouver City Planning Department. For the purposes of the current study, the neighbourhood centres upon the Drive itself, and extends from Grandview Park in the north to Broadway Avenue in the south, and from Woodland Drive in the west, to Victoria Drive in the east (Figure 8). Although relatively well-connected to the city’s downtown core, Commercial Drive is effectively cut off from Strathcona and the other
Figure 8

Commercial Drive Study Area

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downtown eastside neighbourhoods by an industrial "buffer zone" that impinges on its northwestern and western fringes. The manufacturing and warehousing activities that make up the bulk of this buffer zone also serve to separate the area from the Mount Pleasant neighbourhood situated on the rise above False Creek to the south east; the latter of which has experienced dramatic change over the last two decades. On its eastern and southern margins the neighbourhood blends into the established, and relatively stable, single family residential neighbourhoods of Hastings-Sunrise, Renfrew-Collingwood and Cedar Cottage.

At the last federal census, the Grandview-Woodland local area had a population of 25,685 (Vancouver City Planning Department, 1986). Despite some recent changes, the area population remains younger than that of the city as a whole, with 15 percent of residents under 15 years of age and a smaller number of seniors than might on average be expected. The socio-economic characteristics of the local area reflect its historical blue-collar and immigrant origins, with education levels lower than that for the city as a whole, and 41 percent of local residents reporting a first language other than English. Specifically, just over 20 percent of residents have less than a grade 9 level of education, while the major ethnic groups represented on the basis of first or home language include Chinese, Italian, Vietnamese and Portuguese.

Average income levels are low across the Grandview-Woodland local area with 42.5 percent of the population classified as persons in low-income households, and a local unemployment rate of 20.5 percent. As a reflection of these low income levels, almost three quarters of all occupied private dwellings are rented.

4.2.2 Historical Development

Development in the Commercial Drive area began in the 1860's as small
numbers of settlers moved east from the original city core. The early pace of settlement was slow, however, as developers and speculators acquired district lots and started to break them down into city blocks, streets and buildings. Over the final three decades of the last century, almost all the available land was slowly sub-divided which provided the legal survey framework for the development of the current street plan as well as the other morphological features.

The extension of the streetcar lines from the city centre into the surrounding suburbs prompted the area's first residential developments (Clement, 1976; Morley, 1978). The area emerged as one of Vancouver's first streetcar suburbs with the extension of the 'Fairview beltline' street car route to the present day Clark Drive (Clement, 1976). Further streetcar extensions in 1893 along Venables street, allied with the development of the inter-urban electric railway line from New Westminster to Vancouver which ran through Park Drive (current day Commercial Drive), served to increase the potential for settlement and hence development in the area (Vancouver City Planning Department, 1975).

The majority of early homes clustered along the streetcar lines and existing 'skid roads' that followed either the creek beds or former logging roads. During the first two decades of the current century, the dispersed pattern of settlement became more focussed and concentrated as the area attracted additional settlers. Developments during this period were not impressive, however, especially when compared to the rapid rates of growth that occurred in other areas of the city (Macdonald, 1973; McCann, 1978); indeed many developers and settlers overlooked the local area. One indicator of the slow rate of growth was the large number of lots which remained undeveloped up to 1914 - with rooming houses and early apartment buildings congregated along the streetcar lines. During this
early period of settlement, a high turnover of residents meant that the majority were renters rather than owner-occupiers. This, allied with the numerous area residents who lived in rooming houses, gave the early community an air of instability and transience.

The decisions of a small group of developers and speculators heavily influenced the form and profile of early developments. The group, composed of local professionals, shopkeepers and tradesmen, worked together to shape both the pattern and the form of much of the early settlement. They were, thus, largely responsible for the considerable diversity in the housing developed in the area, which included a range of sizes, styles and quality - a characteristic which remains a feature of the neighbourhood today.

Many of the original structures built to the west of Commercial Drive, for example, were small Victorian era working-men’s rooming houses and cottages. These early structures were generally sited on 25 foot lots and situated beside the early rough dirt roads that rose steeply up from the then False Creek flats. Little of this housing remains today, however, a product in part of its poor quality design and construction. By contrast, a much greater portion of the original housing stock survives on the streets and blocks east of Commercial Drive. The original houses in these parts of the neighbourhood were sited on larger lots, generally 33 feet wide although a number were larger. The area itself was also more advantageously situated on a topographic rise which afforded better views and a physical elevation above that of the working men’s rooming houses and cottages to the west. The original homes built here were larger than the working men’s cottages, Edwardian in style, and of a much higher quality (Holdsworth, 1979). It was in these areas that the original homes of the wealthier members of the community were built, namely the professionals, early business men, and representatives of the original land developers (Vancouver
Although early rates of growth were slower than those for the city as a whole, by the first decade of the twentieth century commercial interests started to congregate along the then Park Drive as part of the development of an early commercial and business axis. The Drive’s attractiveness lay in the streetcar service along it, which encouraged growth at this early stage. In addition to early commercial developments along the Drive, industrial developments also began to encircle the emerging residential areas. The attractions for industry were also transportation based, and included the harbour to the north, as well as the major Canadian Pacific railway line, the Great Northern Railway and the Burlington Northern Railway all directly to the west (Hardwick, 1974). The development of the railways to the west served a double purpose in the growth and evolution of the City of Vancouver, with the material extracted during the excavation of the Grandview Railway Cut used in the reclamation of False Creek land (Roy, 1980).

After 1912, the development of the neighbourhood slowed, while other areas of the city continued to grow and prosper. The emerging suburbs of Kitsilano, Point Grey and Shaughnessy on Vancouver’s west side, for example, all quickly became more prestigious than the Grandview-Woodland area, which suffered in comparison to these new emerging middle income areas (Davis, 1976).

During the initial phases of development up to the first world war, primarily migrants of English and Scottish origin settled in this area. After this period, however, the focus of settlement changed with a relative increase Italian, Chinese and eastern European immigrants. According to Hardwick (1981), the expenditure of large sums of capital in rebuilding old houses often for extended families reflects the penchant of these groups for upward economic mobility and
land development.

In response to these changes in the ethnic mix, many of the original settlers of English and Scottish origin left the area and either became absentee landlords or sold their land outright (White, 1980). The result was a large number of vacant lots throughout the 1920s which remained a feature of the neighbourhood despite the installation of water, sewer, streetcar lines and road surfaces ten years before. The subsequent depression in the 1930s continued the stagnation and, in response to worsening economic fortunes, many of the larger houses were either divided up to form inexpensive suites or converted into low-cost rooming houses. Both of these changes provided low-cost accommodation for immigrant populations, many of whom worked in either the port industries on the Burrard Inlet - particularly the B.C. Sugar refinery - or the numerous sawmills which lined the False Creek flats.

During the interwar period the area emerged as a point of destination for newly arrived immigrants, and displaced East Indian residents, a development that laid the foundation for its current ethnic diversity (Marlatt and Itter, 1979). This trend continued after the war, and into the 1950s and 1960s when the neighbourhood’s role as an initial entry point for newly-arrived immigrants was not only maintained but reinforced (Hardwick, 1974).

The major ethnic group attracted to the community during this period was the Italian (Collett, 1982). Throughout the 1960s their presence in the area remained strong although by the 1970s and 1980s they were exceeded in number by the broadly defined ‘Asiatic’ ethnic group that included immigrants of Chinese, and East Indian origin. Although Chinese and East Indian groups now form the dominant ethnic groups in the area, the Italians maintain a prominent role in the community, the visible landscape and in local commercial activity - particularly along Commercial Drive.
The Italian population had, and continues to have, a considerable impact on the social, cultural and physical character of the community. One of the first and most immediate effects of early Italian immigration into the area was in the realm of housing. The Italian community were largely responsible for much of the 'incumbent upgrading' of the existing housing stock that took place and still remains a feature of parts of the neighbourhood today. In addition, revitalization of the local retail sector was also initiated, the effects of which similarly still remain noticeable (Collett, 1982).

More recently, the neighbourhood has attracted a different array of cultural groups, a product of both physical and cultural developments in the area. According to Bulhozer (1979) the area was ‘discovered’ in the late 1970s by a group of individuals more commonly associated with the fashionable west side of the city. This ‘new wave’ or ‘counter-culture’, as it has been referred to in the past (Roszare, 1968), is an amorphous and loosely connected group of students, feminists, artists, pre-, semi- and full-professionals, attracted to the area initially as visitors and eventually as residents in search of both cheap housing and the other ethnic amenities that the area has to offer. The impact of this new group on the Drive and its environs has been two-fold. First, in terms of local housing, they have contributed to an increased demand for rented apartments or suites, and at the higher end of the market small but convenient condominium developments. Second, they have helped to develop, and maintain, within the local area a unique array of cultural, retail and social ventures which include specialized stores and institutions.

In summarizing the various developments which have influenced Commercial Drive over the last century or so, the history of the area may be outlined by reference to Chicago School terminology and concepts, particularly those of ‘invasion’ and ‘succession’. While the initial development of the area
was slow, the product of its relative unattractiveness by comparison to other suburbs of the city, between 1920 and up to the 1960s the area experienced an "invasion" by Italians from the crowded ‘old’ east end of the city followed by the eventual 'succession' of other ethnic minority groups, particularly Chinese and East Indian immigrants, as other sections of the Italian community began to become integrated both socially and spatially into the wider Canadian and Vancouver society. More recently, the Mediterranean ethnic flavour of the area, allied with its relatively affordable housing stock, has resulted in the attraction of the new wave or counter culture group more traditionally associated with Vancouver’s west side. Despite this recent change in the area’s profile, however, the influence of the Mediterranean, and particular the Italian culture, remains strong with the continued legacy not only of improved and architecturally distinctive housing, but also the collection of an array of formal and informal social worlds that remain strongly entrenched as part of the everyday social world and culture.

4.2.3 Local Area Morphology

The geographical setting for these several cycles of development is characterized by an uneven topography (Figure 9), that reflects its broader physiographic link with the larger bowl structure that centres on False Creek. As part of this larger structure, the local area slopes down to the west and the south from a high point in the vicinity of Graveley Street and Salisbury Drive. The gradient is steepest in the north western portion of the neighbourhood, and gentlest in the north eastern which forms a plateau-like area. South of First Avenue, Commercial Drive slopes down to Broadway Avenue, while north of First Avenue a gentler slope characterizes the Drive.

Occasional dramatic gradients similarly characterize the avenues which
Figure 9

Commercial Drive Local Topography
cross the Drive. Seventh Avenue, in the south eastern corner of the
neighbourhood, for example, descends steeply to Commercial Drive from the
west, and falls sharply again east of the Drive, dropping over 60 feet in two
blocks. Toward the centre of the study area, the slopes on both sides of the Drive
are more symmetrical, but resume a more prominent east-west orientation north
of Graveley Street.

The local street pattern, laid out on this uneven terrain, retains a grid-iron
pattern, with some minor variations. Commercial Drive forms the major
north-south arterial road and runs through the heart of the neighbourhood, with
Cotton Drive to the west and Salisbury Drive to the east less prominent
north-south routes, that are truncated part way through the local area. A series of
east-west streets bisect the neighbourhood and extend from Charles Street in the
north to Broadway Avenue in the south. South of Third Avenue a school and
park to the east of the Drive between Fourth and Sixth Avenues, and by the
Grandview Railway Cut and Grandview Highway on both sides of the Drive
south of Seventh Avenue disrupt the regularity of the east-west street pattern.

Within this broad morphological framework, the local built environment
reflects the historical development of the area, allied with the current land
zoning (Figure 10). Commercial Drive itself serves as the shopping, recreational
and service centre for the larger Grandview-Woodland area. The "Drive", as it is
locally known, is one of Vancouver's oldest suburban shopping streets, and is
crowded with a broad variety of shops and stores in its northern section, which
give way to a mixture of service, institutional and light industrial uses south of
Third Avenue.

Commercial Drive is zoned for commercial use from Venables Street north
of the study area to Fifteenth Avenue south of it in Cedar Cottage. Between
Third and Sixth Avenue a further light industrial land use is permitted. The six
Figure 10

Commercial Drive Land-Use Zoning

Source: Vancouver City Planning Department
block commercial core between Charles Street and Third Avenue forms the traditional retailing centre of the local area. Within this section of the Drive, approximately ninety per cent of the ground floor footage is devoted to the retail trade and service use. The majority of store frontages are small, less than 33 feet in width, and, as a result, a large number of businesses, many of which are long-established, congregate in this six-block stretch. The most common shop frontage measures sixteen and a half feet which represents the standard thirty-three foot lot divided between two uses. As an exception, larger store frontages include the fifty foot span of the Liquor Store at the south-east corner of Commercial and Grant, and those of the banks at the intersection of Commercial and First Avenue.

North of First Avenue, a number of stores with awnings and canopies or recessed entrances provide an echo of Mediterranean imagery. Tile and brick facades are also common, as are bay windows on the residential upper storeys that encroach over the sidewalk. Between Charles Street and Third Avenue, the majority of buildings that line the Drive are two-storey in height, and were generally built prior to the 1950s. The newly constructed Il Mercato Mall and service building which occupies half of the commercial block at the north-west corner of First Avenue and Commercial Drive is an exception. Immediately to the west along First Avenue is a McDonalds Restaurant, built in the early 1980s, one sign of the changes that have occurred in the neighbourhood. In contrast, the Grandview Salvation Army Citadel across the street from McDonalds, is the only church in the commercial area of the Drive. Built during an earlier cycle of development it symbolizes the 'pre-ethnic' or 'English Canadian' phase of the area's development.

The shopping core retains a lasting impression of the local Italian influence, and survives as one of the few remaining bastions of the small, family
enterprise in the Vancouver area. A key contributing factor to this has been the continued presence of the Italian community both as local customers, and more significantly, as local business owners and merchants along the Drive. The emergence of the Drive as a fashionable area for both local and city-wide non-Italians on account of its distinctive ethnic or European flavour has further encouraged the growth of local business. City planning policy, spelled out in the Local Area Policy Plan which calls specifically for the area to serve the dual role of a distinct centre serving neighbourhood residents and a unique shopping area in Vancouver, further promotes this particular trend.

The six-block stretch that forms the basis of the commercial core retains a pedestrian orientation, albeit along a street characterized by heavy traffic flows. North of First Avenue the width of the Drive narrows to one lane of traffic in each direction as the result of on-street parking, while the sidewalks are busy with a variety of shoppers and visitors. This changes south of First Avenue, where the Drive widens into four lanes of traffic, parking is restricted, and the number of pedestrians decreases. North of First Avenue, slower traffic flows affirm pedestrian activity in the general pattern of movement on the Drive, and contribute to its window-shopping character, while curbside parking acts as a buffer between the sidewalk and moving traffic.

The major cross-town route of First Avenue cuts through the southern third of the retailing core, thereby disrupting its pedestrian character. This major four lane highway, with an additional left turn lane at the intersection of Commercial, forms the major routeway through the community for traffic heading into and out of the downtown core. It also provides direct access to the freeway (Highway 401) to the east. Heavy traffic flows characterize this major intersection for the majority of the day.

Between Third and Seventh Avenues, the retail orientation of the Drive is
replaced by an assortment of land uses which include special trades contractors, wholesale distribution stores, ground floor residential developments, and retail and service amenities. This mixture of land uses is supported by the commercial/light industrial zoning of the Drive, which in turns contributes to the smaller number of window shoppers and pedestrians who pass through this section of the Drive. The four lane width of Commercial Drive within this section of the neighbourhood serves further to diminish the pedestrian character of the area.

While the majority of buildings remain two storeys in height, just as they are in the shopping core, the increased width of building frontages (up to 135 feet) results in a loss of the more intimate character of the streetscape. Facades of a more institutional nature, with brick or stucco exteriors rather than windowed shop frontages, awnings and recessed entrances replace the human scale of building facades in the shopping core. The business influences of Chinese and East Indian ethnic groups are also much more noticeable within the southern portions of the Drive, as indeed they are on the southern margins of the neighbourhood south of Broadway Avenue.

The imposing physical landscape features of the Grandview Highway and Grandview railway cut, both of which sweep a broad path across the Drive, as well as the elevated track of the Skytrain which feeds into the Broadway Station located directly above Broadway Avenue dominate the final section of the Drive between Seventh Avenue and Broadway. Physically distinct from the remainder of the Drive in both its form and function, the southern section of the Drive includes the intersection of two major bus routes, as well as the juxtaposition of three major transportation modes: the car, train and Skytrain. The Broadway-Commercial intersection similarly forms part of a separate commercial centre, that includes a number of large newer buildings with long
frontages (generally in excess of 50 feet), and office uses on the second and third floors. A large Safeway supermarket is located half a block east of Commercial on Broadway. South of Broadway Avenue, the local area assumes a more noticeable Asiatic flavour as the last remnants of the Mediterranean influences of the Drive are lost. In sociological terms, the collective effect of the 'barriers' clustering around the Broadway intersection including the Skytrain and Grandview Cut is to define the boundary of the 'natural area' to the north, that is the Commercial Drive area.

On either side of the Drive, the local side streets are primarily residential in nature. To the east of the Drive, they are zoned for single or two-family dwellings (RT-5), while to the west between Commercial and Woodland multiple dwellings are permitted. This basic distinction between the zoning of individual residential streets is reflected in their respective built environments. To the west of the Drive, for example, the multiple family zoning has supported the demolition and replacement of portions of the original housing stock by low-rise apartment or condominium structures. The majority of development has taken place in the south-western portion of the study area on the Southern sections of the Britannia Slopes. West of the Drive on Fifth Avenue, for example, only seven of the original forty-two single family homes remain, with the majority replaced by low rise apartment structures. This replacement of the original housing stock, is replicated on Sixth Avenue to the south where none of the original single family housing remains on the first block west of the Drive.

North of First Avenue, multiple family zoning has had less impact on the residential landscape. Although low rise apartments have been developed on both First Avenue and Graveley Street, the majority of the original housing survives, in the form of two or three-storey timber sided houses built prior to the 1930s mostly on thirty-three foot lots. A portion of this housing is sub-divided
into rental units, however, some of which are in need of repair characterized by weathered facades and sagging front porches and steps.

To the east of the Drive, the single and two-family zoning of the area has resulted in the maintenance of much of the original pre-1930s housing stock. As within the north western portion of the study area, the majority of older homes are two or three storeys in height and sited on thirty-three foot lots. While the thirty-three foot lot size is the norm, specific variations of this include forty-nine foot lots on Graveley Street and the north side of First Avenue, as well as narrow twenty-five foot lots on the south side of Third Avenue, on Fourth Avenue, McSpadden Avenue and Fifth Avenue. On these streets, the smaller lot sizes dictate the close alignment of single-family dwellings, with some newer narrow design houses also introduced.

The largest houses to the east of the Drive are found in the north-eastern corner of the local area. Many of these houses are multiple conversion dwellings and provide accommodation for a number of separate households. The conversion of these older three-storey houses provides moderate cost rental accommodations suitable for families and groups of individuals sharing suites. In the south eastern portion of the study area, on Sixth and Seventh Avenues a similar grouping of conversions is evident with rental properties juxtaposed alongside privately owner-occupied homes.

On both sides of the Drive, the residential character of the neighbourhoods is emphasized by the mature deciduous trees that line individual streets; for example, Seventh Avenue to the east of the Drive, Sixth Avenue to the east and west, Third Avenue to the east, and Kitchener and Charles Streets also to the east. In addition, the provision of back lanes in the south-eastern, north-eastern and north-western sections of the study area results in lower overall housing densities and a greater sense of space.
As a final element of the local landscape, the neighbourhood also includes three separate parks: Grandview on the northern periphery of the neighbourhood, Victoria one block east of the Drive between Kitchener Street and Grant Street, and McSpadden which extends from Fourth Avenue to Fifth Avenue one block east of the Drive. McSpadden is the largest of the three parks, covering an area in excess of four acres which includes a soccer field and playground. Victoria Park, six blocks to the north, is just over two acres in size and has a more enclosed character as a result of the mature trees which define its borders. The final local park, Grandview, which borders directly onto Commercial Drive, covers an area of two acres and includes a tennis court, small playground area and war memorial.

4.3 False Creek

4.3.1 Introduction

False Creek has been heralded as one of the most innovative and creative city centre neighbourhood developments in Canada. The local area has been carefully planned to form “a beautiful addition to Canada’s most beautiful city” (False Creek Development Group, 1977). The neighbourhood includes a mix of residents with diverse lifestyles, incomes and tenure, intended to be broadly reflective of the socio-cultural make-up of both the city and metropolitan area as a whole. The built environment is purposely designed to maximize the views and vistas of water, the downtown skyline and enveloping backdrop of north shore mountains. It includes a range of colours, textures and materials chosen to add a visual diversity to the urban form. In short, False Creek represents a “designer neighbourhood”, and a “notable and venturesome experiment in both physical and social planning” (Ley, 1986, p. 118).
The current form and function of False Creek is considerably different from that of its first 80 years of development, when it served as the site for numerous and even noxious industries, surrounded by rooming houses and working-men’s cottages. A brief history of the area’s growth and development indicates this dramatic change in local form and function, and provides a suitable framework for the discussion of the local geography that follows.

4.3.2 Historical Development

The name False Creek is derived from the natural tidal inlet which outlines Vancouver’s downtown district on its southern side. The inlet forms part of the larger False Creek topographic bowl that includes the plateaus of the downtown peninsula and downtown east side to the north, the Grandview-Woodlands ridge to the east surmounted by Commercial Drive, and the Fairview-Mount Pleasant ridge to the south. The north shore mountains form a backdrop to this overall topographic pattern, with Burnaby Mountain visible to the east (Burkinshaw, 1984).

The first settlement in the area was a Squamish Indian village located on the south shore of the creek near Kitsilano point, on a site under the present day Burrard Street Bridge (Kloppenborg, 1976). The village had been established in the early 19th century to harvest the abundant food resources of the False Creek Basin. In 1871 the village and its surrounding lands on Kitsilano Point’s eastern half were set aside as an Indian Reserve. Reports of the discovery of coal on the Burrard Inlet stirred European interest in the area. Between 1859 and 1866 several attempts were made to begin coal mining, but none was successful. That lumber took precedence over coal, and forestry quickly emerged as the earliest viable industry on both the Burrard Inlet and False Creek, was symbolic of the region’s economic future as a whole (Howay, 1937). Until the late 1880s,
logging was highly selective, although the growth of the early timber industry
did encourage the development of overland links with previously settled areas of
the lower mainland (Morley, 1974).

The period between 1886 and 1914 was one of great importance in the
early development of False Creek. Within three decades the area was
transformed from a quiet inlet, with a marshy shoreline inhabited by waterfowl
and surrounded by dense forest, into a busy waterway. The major force behind
this dramatic change in form and function was the growth and development of
rail and sea transportation in the area (Morley, 1974). The arrival of the
Canadian Pacific Railway not only heralded the advent of a period of growth for
the city as a whole, but also brought about rapid changes to False Creek and
catapulted it to the forefront of the province’s transportation and industrial
sectors. By 1914, industrial developments lined both the north and south shores
of the inlet, from the mouth to a point just east of the then Westminster Bridge.
While the Canadian Pacific Railway was the largest single employer and owner
of shoreland in False Creek, it was the sawmills and related wood industries
which formed the dominant land use.

By 1891, six of Vancouver’s eight sawmills and wood product mills were
located on the False Creek shoreline. The market they served was primarily
local, and the explosive rate of building in the city at this time encouraged the
location of producers and suppliers of other building materials such as bricks,
cement, lime, sand and gravel in the False Creek area (McDonald, 1979). The
development of shipbuilding as an additional local industry further reflected the
growth in the Vancouver economy and fishing industry. At first, shipbuilding
operations were located in the existing lumber yards on the creek, but later,
separate shipyards were developed. After 1900, although the manufacturing of
wood products still dominated, iron works, machine shops and manufacturing
plants for a host of related metal products assumed a greater presence and influence on the Creek (Burkinshaw, 1984). The outbreak of the First World War resulted in the further growth of local industries, especially that of shipbuilding, as fleets of merchant and fighting ships were hurriedly assembled and equipped.

Major physical changes to the waterway itself were also introduced during this period with the reclamation of the eastern mud flats, and the formation of Granville Island at the mouth of the inlet. By late 1918, the spacious, but commercially useless, tidal flats east of Westminster Avenue (renamed Main Street in that year) were filled in and became the site of new Canadian National Railway and Great Northern Railway passenger stations, freight sheds and railyards (Roy, 1970). As a result of this major project, the original marshlands and water surface of False Creek was reduced in size by about one third. The largest single reclamation project, after the infill of the eastern tidal flats, was the creation of the 34 acre Granville Island in 1916. Formally a tidal mud flat, the island was created during the Harbour commissions dredging operations, and quickly became the most densely used industrial site on False Creek (Burkinshaw, 1984).

Despite the optimistic developments and expansions by both the City and Dominion governments prior to the 1920s, by 1930 there were significant indications that all was not well in the False Creek area. As a result of largely unplanned growth, the industrial lands on the Creek were inefficiently used. With the exception of Granville Island, sawmills, railyards and the B.C. Electric Gas Works were sprawled over most of the available land and along the shoreline. The result was low productivity, and significant barriers for any attempts at modernization (Churchill, 1954).

Of greater concern, however, was the air, water and visual pollution which accompanied the industrial and residential growth in the False Creek Basin.
According to a report prepared for the City Planning Commission in 1927-28 there were four major problems. First, 16 outfalls dumped raw sewage from the surrounding residential areas into the creek, fouling both water and air. Second, over one quarter of the waterfront itself was occupied by an assortment of dilapidated timberwork from old wharves, abandoned boat hills and trestles, and dumps of ash, manure, scrap metal, scrapwood, rusting car bodies and other industrial refuse (Burkinshaw, 1984). Third, smoke emissions from the eleven sawmills, which occupied nearly half the shoreline, resulted in an almost continuous pall over the basin, while the B.C. Electric Company’s expanding gas works, together with its auxiliary power station on the north shore between Carrall and Main Streets, further contaminated the air at the eastern end of the creek. Lastly, portions of the reclaimed eastern flats, not used for rail trackage, were dreary, unsanitary and over-run with rats (Churchill, 1954).

The unsightly nature of these developments resulted in depressed property values in residential and business districts surrounding the Creek, including the section of Main Street adjacent to the expensive new railway terminal buildings. In short, False Creek's relative location had altered from the outskirts to the centre and, while still a valuable and active industrial waterway, the Creek's proximity to the emerging city centre presented a problem. The first comprehensive plan for the City of Vancouver, commonly called “The Bartholomew Report”, prepared for the Town Planning Commission in 1928, made specific mention of the nature and extent of these problems (Bartholomew, 1928).

Little was done, however, to bring improvements to the Creek, and the ensuing depression served rather to compound the existing problems (Morley, 1974). A general decay of the area's industrial plant reflected the widespread economic malaise, while several hundred squatters, unable to afford other
accommodation, took up residence in houseboats and shacks along the shoreline. The outbreak of the Second World War provided a temporary boost for the area industries, particularly that of shipbuilding, but it was not sufficient to effect a widespread change in fortunes (Burkinshaw, 1984). The decline in the sawmilling industries which had begun in the 1930s accelerated in the early 1950s, until only three mills remained by 1963. The loss of the mills was precipitated, in part, by the reluctance of owners to invest in new equipment given the insecurity of their tenure. Other businesses or industries could not be attracted to replace them on account of False Creek’s reputation as a 'bad address', a product of its polluted environment and uncertain future (Churchill, 1954). With the departure of the mills, much of the land on the south shore was used primarily for the open storage of automobiles.

Despite the obvious decline, however, two major factors, namely the nature of land and foreshore ownership on the Creek, and conflicting visions for the use of the area, militated against the prompt settlement on a revised strategy for its redevelopment. The problem of fragmented ownership was eventually addressed through a series of land exchanges among the major land owners which served to provide a manageable framework for the subsequent redevelopment of the creek (Morley, 1978). First, in 1967 the C.P.R. and provincial government exchanged land to consolidate their respective holdings. This exchange was quickly followed by a second, and more significant exchange, which saw the province transfer ownership of some 85 acres on the south shore to the city in return for city-owned land on Burnaby Mountain, required to establish Simon Fraser University (Burkinshaw, 1984). As a result of these land exchanges, the City of Vancouver came to own nearly all of the south shore east of Kitsilano trestle, as well the eastern shoreline itself, and became the major landholder on the Creek.
While negotiations for these subsequent land exchanges were underway the city’s long-standing vision for the False Creek area also changed. Prior to 1965, the city had viewed the False Creek area as primarily a site for industry. By the late 1960s, however, residential and recreational land uses were considered for the area. This fundamental change in direction was the result of three major factors: public opinion, economics, and the development of the Point Roberts port facilities south of Vancouver (Elligott, 1977).

By the late 1960s it was increasingly apparent that public opinion would no longer tolerate the presence of industry so close to the city centre. Indeed, the public clamoured for change on the creek from industrial uses to those of a more residential or recreational nature. It had also become clear that a change from blighted industrial land use to attractive residential and park uses would yield greater tax revenues. And there was speculation that tourist trade would also increase if the derelict industrial harbour area were converted into a parkland waterway. Finally, the National Harbours Board announced that it had no development plans for False Creek, preferring to concentrate on Roberts Bank to the south of Vancouver (Burkinshaw, 1984).

The 1968 decision of City Council to lift the industrial land-use designation from False Creek ushered in a period of total transformation, that rivalled the earlier transformation of the area from a forest-lined inlet to an industrial harbour and waterway (Elligott, 1977; Fukui, 1968). Indeed, dramatic physical changes have occurred in the area, in the twenty-five years since the decision. With only a few exceptions, such as the small pocket of remaining industry on Granville Island, False Creek has been transformed into a residential and park development. The recreational, residential, commercial and cultural developments completed on the south shore, and on Granville Island with the assistance of federal funds through CMHC, have made False Creek one of the
most popular attractions in Vancouver for both residents and visitors alike (Burkinshaw, 1984).

4.3.2. Local Area Design and Morphology

In its planning and development, False Creek was designed to be a mixed-income "village" in the heart of the city. The Special Council Committee on False Creek, struck to oversee the redevelopment of the area, saw the twin challenges of the development as being the "creation of a landscape in harmony with the physical environment", as well as one that met "social needs" (Ley, 1984). In the redevelopment of the site, many of the major design decisions were influenced by the "patterns" or environmental criteria contained in Christopher Alexander's "Pattern Language". In addition, the ideas of other social scientists advocating humane planning sensitive to user needs were also incorporated, including Jane Jacobs on social diversity, Herbert Gans on neighbouring and Terence Lee on spatial aspects of the community (Kemple, 1980; Wright and Collymore, 1980).

The physical reconstruction of the site began on a clean slate. All of the existing structures were demolished, and even the contours of the land were modified. Three broad design principles formed the basis of the redevelopment: first, the car was relegated to the peripheral regions of the site; second, the project was designed to face the water, and include a continuous seawall: and third, the dominant building style was to be post-modern, with local building materials selected to emphasize the British Columbia location.

The result is a modern inner city development that covers an 85 acre site on the southern shore of the inlet, and includes three residential neighbourhoods, Heather, Spruce, and Alder Bay; a 16 acre park located between the Heather and Spruce neighbourhoods; an elementary school situated on the eastern
periphery of the Spruce Neighbourhood; two marina sites; and a seawall that traces the shoreline as well as a series of walkways that encircle the individual neighbourhoods and cross the site. As a result of the desire to reduce the impact of traffic on the community, vehicle access to all three neighbourhoods is restricted, and only a limited amount of parking is available (Figure 11).

The two Phase One neighbourhoods of Spruce and Heather consist of a series of housing clusters or enclaves, which encircle open central spaces. These contrast with the Phase Two development of Alder Bay, and the eastern margins of the site which include more traditional north-south and east-west linear alignments of housing units, although the replication of traditional streetscapes has been avoided. A careful attention to planning detail that extends not only to the layout of the residential portions of the development but also to the design and layout of the 16-acre park at its heart characterizes the whole area. The park was designed as a natural reflection of the British Columbia coast and includes a garden of native plants, a stream, waterfall and a lake - complete with Canada geese (Ley, 1984).

Population figures from the 1981 census, on Phase One of the development, reveal that 2,571 people were resident in some 1,175 households, representing approximately 40 percent of the proposed south shore development. Within this first phase of development, all of the housing units surveyed were located on city-owned land, with seventy-two percent (846) non-market housing whose sponsors included service clubs, an ethnic association, seniors organizations and associations for the physically disabled. By 1986 a total of 4,736 residents lived on the south shore in some 2,607 households. Housing developments at this time had expanded to cover some 93 percent of the available shore, just over 80 percent of which (2,026 units) were located on city-owned land. Of the total number of units developed, 44 percent (1,172) were non-market housing.
Figure 11
False Creek: Study Area

Granville Island Commercial and Industrial Area
Spruce Neighbourhood
Heather Neighbourhood
Charleson Park
Alder Bay Neighbourhood

0 100 meters
Data on age, income and household characteristics indicate that the planning objectives for the area, namely that the development reflect the Vancouver Metropolitan Area population and include a mix of households, have in the most part been met, although overall resident income levels exceed those of the metropolitan average. While the age mix of the area is broadly similar to that of both the City and the metropolitan area as a whole, the proportion of residents between the ages of 20 to 44 years is slightly higher. In addition, False Creek accommodates fewer lower income households, and more high income households, than either the City or metropolitan area. False Creek maintains a mix of families, couples, singles and adults sharing, in individual households, although the majority of families are concentrated in the first phase of the development which includes the majority of non-market housing units (61 percent). The low-rise style of these original neighbourhoods, allied with the proximity of the local school and park area, provide the first phase of the development with a distinct family-oriented atmosphere that contrasts with the working-adult orientation of the higher density housing areas built after 1981.

Of the three neighbourhoods, Heather is the most diversified both in terms of its physical design and its social profile. The neighbourhood includes a mix of social and market housing, a marina with a percentage of live-aboards, commercial offices and retail space, studios and recreational areas. Five enclaves, or 'dough-nut shapes', make up the neighbourhood, and vary both in their built form and social composition (Figure 12). Leg-in-Boot Square, south of the marina, forms the focal point or commercial heart of the neighbourhood. The Square opens out on to the marina, and is surrounded by a series of multi-use concrete construction buildings. The majority of ground floor and first floor units that front onto the square contain commercial outlets, with the remaining floors housing self-owned strata-title condominiums. The rough
Figure 12

Heather Neighbourhood

Enclaves 1, 2, 3, 4, 5

A. Stamp's Landing
B. Leg-in-Boot Square
C. Seawall
D. Park and Lake
E. Ongoing Construction
granite surface of the square itself lends a traditional character to the local area, that contrasts with the more modern design and texture of the majority of individual buildings.

Immediately to the north and west of Leg-in-Boot Square, enclave one consists of housing units that terrace from two to six storeys away from the marina, with the continuation of commercial store frontages along the seawall walk. A restaurant and pub at Stamp's Landing form the final extension of the commercial zone. Enclaves three, four and five to the west are primarily wood frame low rise or town home style units, with the one exception the concrete terraced units that line Millbank Road and look out over the marina. Enclaves four and five, situated with the inlet to the north and the park to the west, retain a southern European character based on the massing of individual housing units that resembles the morphology of a hillside Greek Island village. The individual housing units are raised above the street to provide clear sightlines to the downtown and coastal mountains to the north.

To the north and east of the Heather neighbourhood, the ongoing construction of large multi-storey structures as part of Phase Two of the development continues adjacent to the waterfront and Cambie Bridges. These ongoing construction projects give the local area an unfinished character that extends to cover large portions of the eastern sections of the Creek. The three major high rise structures that border on Commodore Road are all over 10 storeys in height and form massive-scale developments as compared to the smaller-scale timber-frame housing units located to the east. Vehicle access to the Heather neighbourhood is limited to Moberly Road which snakes immediately to the south and east of enclaves one, two and three. In addition to this local thoroughfare, the small square at the intersection of Ferry Row and Millyard also provides some visitor parking, while commercial vehicles access
Leg-in-Boot Square along Market Hill.

Spruce, the second of the original neighbourhoods, is situated to the east of Heather and separated from it by the 16 acre park which sits in the heart of the community. The Spruce neighbourhood consists of three enclaves arranged around a small central square area (Figure 13). Three hundred and twenty-three housing units make up the neighbourhood which is less densely populated than Heather to the east. The majority of housing units in each of the three separate enclaves are low-storey timber frame structures, which contrast with the high-rise reinforced concrete structures of the eastern portion of the Heather neighbourhood. As a result of this smaller size of the local buildings, the neighbourhood retains a more human scale which is further reinforced through the breaking up of the individual enclaves to avoid the appearance or sense of large masses of housing. The situation and orientation of the individual enclaves within the neighbourhood differs. The northern units in enclave seven, for example, front the Spruce Marina which spays out from Ironwork Passage. By contrast, the southern units of enclave eight look on to Lamey's Mill Road, and face away from the creek onto the major roadways to the south of the neighbourhood. An elementary school bounds the eastern periphery of the Spruce neighbourhood, which in turn leads into a small playground area and a playing field that includes a baseball diamond.

As within the Heather neighbourhood, the interior of the enclaves provide semi-private open spaces for the use of local residents. The spaces are individually landscaped and include a mixture of small trees and bushes. In addition, the paved and landscaped pedestrian pathways of Forge Walk and the Scantlings form enclosed, intimate streetscapes that contrast with the open or exposed environs of the northern and western margins of the neighbourhood.

The final neighbourhood of Alder Bay is situated to the west of Spruce, in
Figure 13

Spruce and Alder Bay Neighbourhoods
close proximity to Granville Island. A mixture of stacked two-storey town house units and eight storey concrete high-rises, Alder Bay has a unique physical character that sets it apart from the two original neighbourhoods. The street configuration within the neighbourhood differs considerably from that of either the Spruce or Heather neighbourhoods, with no individual enclaves or central spaces. The street pattern is modelled on a north-south orientation, although as a variation of this standard street lay out individual structures project out into Lamey's Mill road in a staggered pattern. The north-south streets that bisect the neighbourhood are little more than pathways designed for local resident access only. The exception to this is the pedestrian way that bisects the Alder Bay Co-op and serves both as a local thoroughfare and access road. The stacked two-storey townhouse units that front both sides of the street form something more akin to a traditional streetscape.

Concrete high-rise apartment structures in the west replace the low-rise, timber frame buildings of the eastern half of the Alder Bay neighbourhood. The small-scale design features of the western half of the neighbourhood such as bay windows, trellises and awnings thus give way to larger scale concrete structures-although local attention to landscaping remains in the public spaces that surround the larger buildings. The southern sides of the large high rise structures that congregate in this section of the community face away from the Creek and look out over the Fairview slopes to the south.

The final morphological elements of the Creek include the 16 acre park situated in the centre of the local area between the Spruce and Heather neighbourhoods, and the seawall that runs the entire length of the southern shoreline. A functional division may be drawn between the eastern half of the park which includes the lake and is designed primarily for passive use, and the western half which includes a grass bowl area, playing field and playground.
intended for more active use. A berm wall fronts Charleston Road between the Moberly Road and Oak Street intersections which serves to shield the passive regions of the park from the heavy traffic flows that characterize Charleston Road and Sixth Avenue to the south. The seawall set in rough granite ashlar, serves as a stabilizing element within the community that traces the shoreline from Granville Island through to the Heather Marina. The seawall provides pedestrian access to the marinas, and forms a popular route for joggers, pedestrians and cyclists alike.

From a variety of standpoints the residential development of False Creek’s south shore may be considered a success. The development has received positive reviews from both a planning and architectural perspective (Kemple, 1980; Progressive Architecture, 1980, Wright and Collymore 1980), and has similarly been well-received by residents and visitors alike. In terms of a major urban development, the area has been spectacularly transformed from a large tract of derelict and polluted land zoned for industrial activity to a pioneering medium-density residential area that supports a mix of housing tenures, social classes, age groups and lifestyles. The current 'designer landscape' with its deliberate mix of socio-economic groups and its residential and recreational orientation remains a far cry from its original development as an industrial site serving the growing urban city centre on its doorstep.

4.4 Ambleside, West Vancouver

4.4.1 Introduction

Ambleside forms part of the Municipality of West Vancouver situated on the north shore of the Burrard Inlet to the west of the First Narrows. The municipality stretches approximately 19 kilometres from the Howe Sound in the
west to the Capilano River in the east, and extends north from the waterfront about five kilometres to the southern margin of the coast mountains. Covering an area of some eighty-eight square kilometres, and with a population approaching 40,000, West Vancouver is a residential community with one of the highest per capita annual incomes in Canada (Eng, 1978).

The key to the history and growth of West Vancouver lies in its close association with the industrial and commercial development of the Greater Vancouver area (Davis, 1976). The site and situation of the municipality were significant contributors to its emergence as a “fine residential suburb of Vancouver”. Almost eighty percent of the labour force commute across Lions Gate Bridge each day (West Vancouver Municipal District, 1988). It is the only municipality in the Greater Vancouver area without local industry, although in earlier years, fish canning was carried out (Pratt, 1984).

The local topography is spectacular (Eng, 1976), and forms one of the area's major attractions. The municipality is framed by a striking backdrop of impressive peaks, and is traversed by nineteen watercourses which add both physical interest and definition to the individual neighbourhoods, including Ambleside. The modified channels of these occasionally fast-flowing streams also perform the practical function of storm drainage, but can pose serious flooding hazards at times of peak flow. The dramatic topography has served both as a magnet for settlement as well as a barrier to it. Despite considerable pressures to expand, municipal restrictions limit development to elevations below the 1200 foot contour on the southern slope of the Hollyburn Ridge, an area that accounts for barely one quarter of the available land.

4.4.2 Historical Development

The first known settlement in the area was an Indian village sited at Sandy
Cove (Ramsey, 1986). Early development did not take place, however, until 1869 when the first timber license was granted for the west bank of the Capilano River. Prior to this period, the area had already been explored by the Hudson’s Bay Company to determine its potential for furs, and partially surveyed by the British Navy between 1859 and 1860, although no permanent settlement resulted (Walden, 1947; Etchell, 1974).

The issue of a land proclamation in 1869, which gave settlers in British Columbia the opportunity to pre-empt land in 150 acre blocks, a figure subsequently increased to 160 acres, provided an early incentive for settlers. By 1880 there were four landholders in present day West Vancouver, a number that increased with the completion of the Canadian Pacific Railway to Vancouver, and the general interest in real estate generated throughout the whole of the Lower Mainland by the arrival of the railway (Morley, 1978; Nicolls, 1954).

In 1891, the current area of West Vancouver, with an estimated population of between 150 to 200 people, was incorporated as Wards One and Two of the West Capilano District of the newly incorporated Municipality of North Vancouver (Etchell, 1974). Its inclusion was, in part, a response to the estimated potential value of real estate holdings in the area. The consolidation of the municipality provided the potential for increased development, and a road from Deep Cove to Eagle Harbour was proposed and subsequently authorized by a bylaw passed in 1892 (Walden, 1947). The province-wide recession during the last decade of the nineteenth century, however, stifled any substantial growth during this period.

The years which immediately followed 1905 saw a change in fortune which marked the beginning of the first period of significant growth within the area (Walden, 1947). Buoyed by dramatic growth in the City of Vancouver (Hardwick, 1974), West Vancouver began to emerge, for the first time, as a
residential suburb for the expanding urban environment on the south side of the inlet. Prior to this time, the majority of the early residents worked on the north shore at either the lumber mills, or in the series of small farming ventures developed to supply resident populations. Two fish canneries were also sited on the north shore during this period, the first at Eagle Harbour in 1897 and the second just east of Sandy Cove in 1898 (Davis, 1976). Both operations were largely dependent upon a seasonal labour force, and as a result employed only a few local residents in their operations. With the exception of these early enterprises, there was little or no sustained industrial development in the area (Walden, 1947; Davis, 1976; Ramsey, 1986). Although primary industry enjoyed a brief tenure in the form of logging activity, shingle mills and the fisheries, the most valuable stands of timber were quickly cleared prior to the turn of the century, and the fisheries looked increasingly north after 1900. Secondary industries did not fill the void left by primary industry as the district’s rugged topography and isolation presented barriers to potential developments. The absence of local industry did, however, serve to increase the attractiveness of the district for residential development, with none of the fumes and noxious odours associated with many of the early industrial enterprises in Vancouver (Morley, 1978).

The ensuing land boom in West Vancouver from 1905 onwards was a direct result of the rapid growth in the City of Vancouver, which emerged as a principal port in trade with the Orient, and a commercial centre for the young resource-rich province during this period (Hardwick, 1974; Morley, 1978). The population of Vancouver increased significantly from 13,709 in 1891 to approximately 100,000 by 1911, and as a result dramatically increased the value of available land on the north shore. The location of industry and residential developments side-by-side in many of the early city suburbs further increased
the value of residential sites unspoiled by the presence of industry. The result was a period of considerable land speculation in West Vancouver between 1905 and 1913, which caused land prices to soar, although the population of the district did not significantly increase until after the First World War.

While the demand for land in West Vancouver remained strong during this period, it was clear to both developers and potential buyers alike that the maintenance and subsequent enhancement of land values required improved transportation links to the city. The most commonly used method of transport between the north shore and the city during this period was the North Vancouver ferry which ran from Lonsdale. This route was inconvenient for travellers from the new residential areas of Ambleside and Hollyburn, however, who faced up to a five mile journey before boarding the ferry.

The pressure for an improved transportation system for the residential areas west of the Capilano River came increasingly from real estate speculators who recognized the necessity of such a development for their investment to increase in value, and from owners of summer houses who vacationed on the north shore. By contrast, the majority of the permanent residents of the area, who maintained a mainly subsistence lifestyle in scattered cottages and shacks, lived largely independently of city-oriented transportation systems and routes. The inclusion of present day West Vancouver as one part of the larger municipality, however, diluted the issue with the larger more populated area of the municipality already benefiting from ready access to a ferry service. It was, therefore, left up to the early speculators themselves to develop the improved communication and transportation links they required. Thus, John Lawson, one of the most successful early developers, in conjunction with his brother-in-law, introduced the West Vancouver Transportation Company in 1909 which provided a ferry service between Hollyburn (Seventeenth Street) and Columbia Street in
Vancouver.

The ferry primarily served the lands owned by the two men, and focussed on Hollyburn and Skunk Cove (Caulfield); with the major terminals located at Hollyburn and Columbia Street in Vancouver. By 1912, however, the ferry route carried heavy losses as land speculation ceased and the property boom collapsed. To protect their investments Lawson and a group of fellow developers pushed for change in the local area, and as a result West Vancouver, with a population of approximately 700, split away from the District of North Vancouver, creating the District Municipality of West Vancouver on February 27, 1912. The initial financial statements prepared by the new municipality in 1912 indicated an early concern for the maintenance of transportation links with the City of Vancouver in the form of the ferry service, and the commitment to a level of urban services comparable to those of other suburban communities together with the preservation of the original rural or marine setting (West Vancouver Municipality, 1979). Progress was made in neither of these areas, however, as local development came to an abrupt halt in 1914 with the outbreak of the First World War.

In the postwar period between 1918 and 1924 the population of the new municipality increased six-fold from around 1,000 to about 6,000. The addition of three new ferries which operated between a relocated wharf at Ambleside (at the foot of 14th Street) and Vancouver strengthened communication links with the city (Walden, 1947; Davis, 1976; Ramsey, 1986). In addition, the construction of the Pacific Great Eastern Railway line through West Vancouver in 1913, to link with the North Vancouver Ferry service, provided improved access to the city. Marine Drive, the current major highway through the municipality, was also officially opened in 1915, although only in a partial form.

Despite considerable land speculation within the municipality during this
period, however, residential developments west of the Capilano River remained dispersed in the form of small pockets of settlement arrayed along the shoreline. The majority of houses were small cottages, while dirt roads linked the early clusters of settlement. A lack of planning prior to the separation from North Vancouver also resulted in the haphazard arrangement of lots of various shapes and sizes, allied with the construction of a large number of dwellings without buildings permits (Ramsey, 1986).

Up to 1924, the municipal council continued to try and attract industry to the area, both to provide employment for local residents, and to help offset the large municipal debt acquired as part of the formal separation from North Vancouver. By 1926, however, little had been attracted, and buoyed by the post-war influx of residents, the municipal council passed the Town Planning Act which committed West Vancouver to growth first and foremost as a residential community. The first of its kind in British Columbia, the Town Planning Act was passed to legally preserve the residential character of West Vancouver. This political move, allied with the continued growth of Vancouver as a commercial and industrial centre, set the stage for the emergence of West Vancouver as a premier residential community (Kalman, 1976). To ensure the quality of development, the Town Planning Act also included specific provisions which outlawed the further building of “temporary houses” or summer cottages; dictated a 75 foot minimum frontage for all lots sold in the western part of the municipality and a 50 foot minimum in the east; and required the placement of all houses at least 30 feet back from the front of the property lines (Walden, 1947).

With this enabling legislation in place, West Vancouver’s emergence as a prime residential community began, in earnest, with the purchase of 4,700 acres of land on the lower levels of Hollyburn Ridge by British Pacific Properties
Limited in 1931 (Ramsey, 1986). As part of the terms of the agreement, British Pacific Properties agreed to spend one million dollars on improvements to the land within the first five years after purchase. In addition, the company agreed to try and sell the land for building purposes only, while the municipality offered a fixed property assessment for a period of five years (Walden, 1947; Etchell, 1974).

The onset of the British Properties project necessitated an improved communication link with Vancouver if the development was to be successful. The sale of only a handful of the proposed 450 lots in the new development despite the investment of $1,500,000 by 1937 reflected this need (Walden, 1947). Thus, to encourage residential development in the area the Lions Gate Bridge was constructed and opened in 1939 across the First Narrows (Ramsey, 1986). Despite much early optimism, however, the opening of the bridge did not have the anticipated immediate impact on the sale of land in the British Properties development. Rather, the additional link to Vancouver encouraged the growth of West Vancouver itself. Thus, while in the seven years which preceded the opening of the Lions Gate Bridge the population of the municipality grew by only 300 from approximately 7,200 to 7,500, in the seven years after its completion the population quickly increased by over 3,000 to over 10,500 (Etchell, 1974).

The construction of the Park Royal Shopping Centre in 1950 spurred the continued growth of the municipality. The mall formed the final phase of the developments by British Pacific Property interests who calculated that the introduction of a major shopping development would not only increase the desirability of residence in West Vancouver, but also raise land values throughout the municipality based on the provision of much needed local services. The Park Royal development opened in 1950 with British Pacific
Properties the land holder and Woodward stores the major tenant (Ramsey, 1986). As anticipated, the impact on the British Properties real estate development was significant, and lot sales grew rapidly as the desirability of residence in the municipality increased (Etchell, 1974).

While the construction of the Lions Gate Bridge and Park Royal Mall form visible elements of the emergence of West Vancouver as a premier residential community, an additional, less visible, but nonetheless key factor in the development and shaping of the municipality was the local land taxation policy. The introduction of the 1926 Town Planning Act provided the framework for the development of a strictly residential community, with stringent regulations relating to lot size, and to the design and layout all subdivision developments (Ramsey, 1986). An emphasis on the maintenance of building and building site quality also served to attract middle, upper-class and wealthy residents to the area as prime residential areas within Vancouver such as Shaughnessey and Point Grey became saturated. In addition, a taxation system that favoured residential development was also introduced, with local mill rates held constant between 1931 to 1950, and a single tax system used which left improvements unassessed until 1939, when provincial legislation mandated the introduction of a compulsory multi-tax system.

The absence of industry, the dramatic topography, the close proximity to Vancouver, and the controlled nature of residential development all combine to make West Vancouver one of the premier residential communities in Canada. Residents sum up its essential characteristics in terms such as “charm”, “privacy”, “lots of trees”, “a cottagey feel”, and a “rural atmosphere” (Pratt, 1984).
4.4.3 Local Area Morphology

Ambleside, as defined in the current study, extends from Thirteenth Street in the east to Nineteenth in the west, and from the waterfront north to Esquimalt Avenue (Figure 14). Ambleside forms one of the earliest developments within the municipality, with the original site centred on the shoreline in the vicinity of Fourteenth Street. The village was originally linked with the other early shoreline centres of Dundarave, Caulfield, Sandy Cove, West Bay and Horseshoe Bay, by the early coastal transportation routes by water, the present day Marine Drive, and the railway.

While the neighbourhood initially developed as a small village, its considerable expansion during the 1960s, 1970s, as well as the 1980s has seen its population grow to more than 10 000 residents. This growth has been physically expressed in the local built environment, which has moved away from its original small, semi-permanent, almost rural character to one of a well-established suburban community. Today, the 'village' of Ambleside forms an important retail and administrative centre for the municipality of West Vancouver. It contains the municipal hall at the junction of Esquimalt and Seventeenth Street, the police station and court house at the intersection of Marine Drive and Thirteenth Street, the main fire hall across the road from the municipal hall at Sixteenth Street and Fulton Avenue and the West Vancouver Library at Twentieth Street and Marine Drive. The original village centre at the foot of Fourteenth Street has been revitalized to form a tourist site, and is linked with the ribbon shopping development that extends westwards along Marine Drive. While the neighbourhood has grown considerably from its village origins, it is this semi-rural or village character that both residents and the municipal council alike indicate a desire to preserve in the face of continued pressure for development (West Vancouver, Community Plan, 1988).
The major physiographic features of Ambleside include its beach and waterfront areas allied with its sloped site. The village site slopes steeply northward from the waterfront up the Hollyburn Ridge, and more gradually westwards from a low point in the vicinity of Thirteenth Street to a high point in Memorial Park. The steepest gradients are in the vicinity of Seventeenth and Eighteenth Streets north of Marine Drive, where the local slopes exceed ten percent. South of Marine Drive, the slope of the land falls considerably, and ranges from one percent in the vicinity of Fourteenth Street to six percent on Eighteenth Street and ten percent on Nineteenth Street.

The sloping site forms one of the village's most striking natural features. The local area assumes a terrace-like appearance when viewed from the Burrard Inlet, with many of the individual buildings on the higher elevations characterized by striking natural views of the inlet, Vancouver harbour and English Bay area. A further natural outcome of the dramatic local site is the presence of three local streams that cut down through the neighbourhood from sources high up in the coastal mountains to empty out at the waterfront. Although the major local streams of McDonald Creek on the western periphery of the neighbourhood, Lawson Creek one block east, and Vinson Creek on the eastern edge now each flow through specifically reinforced and modified channels they have, on occasion, burst their channels and flooded portions of the residential and commercial sections of the neighbourhood during periods of heavy rain or spring run-off.

The major street pattern laid out on this uneven terrain is that of a modified grid pattern with some variation in local block sizes. The largest blocks run east to west on the eastern margins of the local area north of Marine Drive, while the shortest extend north and south from Marine Drive at the 1600 block mid-point of the community. This more regular grid-iron street pattern
contrasts with the irregular, curvilinear road networks that follow the contours of the topography in the adjacent neighbourhoods to the north and east.

Marine Drive forms the major east-west arterial road that runs the length of the neighbourhood, and connects Ambleside with points both east and west, and serves as the major road link to the Lions Gate Bridge and Vancouver across the First Narrows. Marine Drive is itself bisected by the major north-south "connector" routes of Fourteenth, Fifteenth and Seventeenth Streets which feed into it from the residential areas to the north. Marine Drive forms the major community thoroughfare and stands out as a busy routeway that runs the length of the community.

Morphologically, the neighbourhood may be divided into three broad zones: the waterfront; the commercial core; and the major residential sections to the north of Marine Drive (Figure 15). The waterfront region forms the oldest portion of the village, and includes the beach, seawalk and local parks of Ambleside and John Lawson at the foot of Seventeenth Street. This section of the neighbourhood includes the most important natural features of the local area, and serves as a recreational site for local residents and visitors to the north shore. The eastern portion of the waterfront, adjacent to Ambleside Park, includes a natural sandy beach, that blends westwards into a more rugged shoreline characterized by a larger stone beach deposit and battered driftwood.

Ambleside Park itself covers an area of some 59 acres (24 hectares), and forms one of the major activity centres for the local area. The park includes facilities for more active recreational pursuits such as playing fields, a fitness circuit, tennis courts, pitch and putt golf course and children's playscape. In addition, the park also contains a bird sanctuary and open spaces for more passive recreational pursuits. Its dramatic site at the entrance to one of the busiest seaports on the Pacific Coast makes it a considerable local attraction for
Figure 15
Ambleside: Morphological Zones

1. The Waterfront
2. The Commercial Core
3. Residential Streets

19th Street 18th Street 17th Street 16th Street 15th Street 14th Street

13th Street

Esquimalt Avenue Duchess Avenue Clyde Avenue Marine Drive

B C Rail

0 100 meters
residents and tourists.

To the west of Ambleside Park, the recreational pier at the foot of Fourteenth Street forms another popular leisure site, with the refurbished old ferry building converted into a local art gallery and information centre close by. The inland section of the Centennial seawall links the pier area to John Lawson Park further to the west, the latter of which forms a more intimate park setting than Ambleside Park, with a small stand of mature trees in its heart, and a large dense hedge which separates it from Bellevue Avenue to the north. The children's play area in the park makes it a popular spot for mothers and their young children on weekday mornings and afternoons.

The British Columbia railway line runs along the northern fringe of the waterfront region, and serves to divide it from the commercial core north of Bellevue Avenue. The line runs at street level the length of the neighbourhood, and although only used once or twice day by regular freight trains, serves as a reminder of Ambleside's and the larger region's earlier history and development.

The second major zone is that of the commercial core which extends east and west along Marine Drive, in ribbon-like fashion, from the "old village" centre located at the foot of Fourteenth Street. While Marine Drive forms the major retail and business focus of the community, and includes approximately 250 local businesses, the concentration of commercial businesses also extends half a block north of the Drive in the central portion of the community as well as one block south onto Bellevue Avenue in the portions of the neighbourhood to the east of Seventeenth Street. The majority of retail businesses on Marine Drive operate out of small confined shop fronts that form the ground floor tenants of one or two storey buildings. The exceptions to this near continuous array of buildings are the gas stations located on the corner lots of Marine Drive, and the large low rise Canada Safeway Store that occupies the southern half of the 1600
block south of Marine Drive, the northern portion of which is set aside for customer parking. The array of local businesses includes a concentration of restaurants and coffee shops, which have been joined in recent years by an increasing number of antique furniture and collectable stores aimed largely at visitors to the local area.

In the vicinity of Fourteenth Street and Bellevue Avenue, the commercial core has recently undergone a process of revitalization. This has resulted in the replacement of older confined store premises by newer post modern design structures that include large windowed shop frontages. As in any revitalization process, however, there have been some architectural problems in grafting the newer construction onto the older building stock. As a result, the commercial core, in this section of the community at least, is a mixture of new and over-aged retail stores and service facilities, although the continued plans for revitalization in this area should result in the eventual removal of the majority of older premises (West Vancouver, Community Plan, 1988).

Throughout its length, the commercial core retains a vehicle rather than a pedestrian character, a result of the heavy volumes of traffic that stream east and west through the community along Marine Drive. Although cars form the dominant vehicle on Marine Drive, the local West Vancouver Blue Buses are also regular users of this busy route, as they head into and out of Vancouver. Pedestrian flows are comparatively light along the majority of the Drive, with on street parking a feature of the roadway for almost its entire length. The four lane width of Marine Drive, allied with the on-street parking on either side, contributes to a local streetscape which is dominated by the vehicle rather than the pedestrian. On the southern periphery of the commercial core along Bellevue Avenue, where the retail environment meets the recreational one of the waterfront, traffic flows are much lighter, although even here pedestrian flows
are sporadic rather than steady.

The third local zone includes the bulk of the residential portions of the community that extend northward from Marine Drive up the slopes of Hollyburn Ridge. While the waterfront and commercial zones both include some residential land uses, the concentration of residential developments are situated north of Marine Drive. Two basic types of residential buildings dominate the local landscape: high rise apartments either for rent or private sale, generally of concrete construction; and timber frame single family dwellings sited on 33 and 50 foot lots. While a small number of low-level town houses are situated north of Marine drive, these are the exception rather than the rule.

The majority of residential dwellings north of Marine Drive, situated between Nineteenth Street in the west and Fourteenth Street in the east, are high rise units located in the Ambleside Apartment Area. The Apartment Area was originally defined and implemented as part of the 1958 Community Plan. Since that time over 78 high rise apartment buildings have been constructed which account for some 3400 dwelling units. A small amount of developable land is still available within the specially-zoned Apartment Areas, and developments continue up to the present day prompted in part by inflated local land values.

In addition to the predominance of high rise dwellings north of Marine Drive a small stock of older single-family dwellings also remain, specifically on the western and eastern margins of the study area in the vicinity of Memorial Park on the west side of the community and Hollyburn School on the east. One recent development is the replacement of smaller, older often chalet style single family dwellings by much larger 'monster' homes, many of which are sited on pre-1926 33 foot lots. Dramatic increases in local land prices have accelerated this replacement of existing dwellings, a subject of much local controversy.

Carefully tended front and backyards generally characterize the local
streetscapes of these small clusters of single family dwellings - which gives the local area a small village character somewhat reminiscent of parts of rural England. The detail and design of individual yards further symbolizes a deep sense of local community pride and ownership. The presence of mature trees dotted along the majority of residential streets further confirms the established character of much of the local area. As one example of this, the mature horse chestnut trees on Seventeenth Street, planted in 1934 by local boy scouts to commemorate the visit of Baden Powell, form an impressive canopy over this busy thoroughfare, and give the whole street a leafy, rural character.

Despite the large number of high rises, the neighbourhood still retains a suburban feel or quality, as a result of the generous, green spaces and well-defined landscaping in the vicinity of individual high rise buildings. The presence of a large number of underground car parks, associated with the high rise structures, further serves to limit the volume of local on-street parking, another characteristic of many suburban areas. Similarly, in the western margins of the neighbourhood, close to Memorial Park, the presence of children playing in the street confirms the residential character of the local area.
Chapter Five: Commercial Drive, False Creek and Ambleside: Everyday Acoustic Worlds

5.1 Introduction

The descriptions of the three study areas outlined in Chapter Four included a brief history of the development of each neighbourhood supplemented by a summary of the local morphology and major functions. As the physical expression of the local neighbourhood, that is its form and function, these interrelated dimensions of each area provide the physical basis for the varied local acoustic environments encountered there and summarized in the current chapter. The descriptions of local acoustic environments, or acoustic portraits, presented in the current chapter have been composed through the completion of a series of sound level measurements, sound counts and soundwalks as detailed in Chapter Three. While the collection of environmental acoustic data through the use of these three strategies may be considered systematic, the portraits presented based on the information gathered through them, convey only a limited impression of the larger acoustic environments that provide the context for the daily lives of local residents.

The following descriptions of the varied acoustic environments of each study area have, therefore, been written to illustrate the range and diversity of local sounds in each of the three study areas, as well as their spatial orientation and temporal pattern. A brief introduction to each area provides a summary of the local acoustic environment, its form and structure. The descriptions of local acoustic environments are subsequently documented through a review of the individual sounds recorded at the pre-determined monitoring locations, which are summarized on the basis of their origin or source (for example motor vehicles) as well as their physical characteristics (intensity, frequency and
duration). As a summary of the local acoustic environments encountered within each of the three study areas, these brief acoustic portraits provide an appropriate empirical context for the subsequent exploration of the soundscapes of local residents that follows in Chapter Six.

5.2 Commercial Drive

5.2.1 Introduction

The Commercial Drive area is characterized by a hustle and bustle of sound and activity that stretches the length of the Drive itself, but fades from earshot on the residential streets that branch out from its well-traversed sidewalks. The range and diversity of sounds throughout the community is considerable, all of which combine to form a series of local acoustic environments that serve both as dynamic products of, and vital contexts for, the everyday interactions of residents and visitors alike. The most common sounds throughout the neighbourhood include the pervasive roar of traffic both on and off the Drive; ambient daytime and early evening music from the variety of restaurants, coffee shops, speciality stores and businesses crowded in the shopping core; the periodic babble of pedestrians' voices on the busy sidewalks of the shopping core; the persistent but low intensity chirping of birds, primarily on the residential side streets off the main Drive; the frequent smooth tone of trolley buses on the Drive and of the skytrain entering and leaving Broadway Station on the southern margins of the study area; the low frequency intermittent rumble of jet aircraft overhead; and, the isolated low throb of train movements from the Grandview Cut.

The intensity and tempo of activity on the Drive continues relatively unabated from the early hours until after dark, as the sounds of daily business routines are replaced by those of a cosmopolitan and vibrant nightlife. While
people, business and natural sounds come and go, however, the one sound that remains almost constant is that of the pervasive roar of traffic. Despite minor lulls and peaks, traffic sounds form the basic element of the majority of local acoustic environments, and 'sound out' as consistent reminders of the dominant role of the internal combustion engine in modern urban society.

As a reflection of the variety and range of local activities and land uses, the content and structure of local acoustic environments varies throughout the neighbourhood. In broad terms, a general distinction may be drawn between the business or community-oriented focus of the Drive itself, and the residential character of the majority of side streets that branch off it. Average daytime sound levels on the Drive, for example, are some ten decibels higher than those on residential side streets; although along the major east-west routeways of First Avenue, Grandview Highway and Broadway Avenue daytime sound levels exceed those of the Drive itself (Figures 16 and 17 and Tables 2 and 3).

The highest daytime sound levels within the neighbourhood coincide, spatially, with the major intersections of First Avenue in the centre of the study area, and Broadway on its southern margin, and temporally, with the two major rush hour periods of early morning (0730 to 0900) and mid to late afternoon (1630 to 1800). By comparison to weekdays, local sound levels fall by some five to seven decibels on Sundays, although on individual residential streets Sunday afternoons are characterized by elevated local sound levels a result of the varied sounds of residents at work either in their yards or on their cars parked in the street.

While the acoustic environments of the residential and commercial sections of the neighbourhood differ, both on the basis of sound levels and the character of local sounds, the one sound that remains dominant is that of traffic. C-scale sound levels throughout the study area are, on average, some 10 to 12 decibels
Figure 16

Commercial Drive: Average Weekday Daytime Sound levels
Figure 17

Commercial Drive: Average Sunday Daytime Sound Levels
### Table 2

Commercial Drive Area: Weekday Daytime Sound Levels by Monitoring Location

<table>
<thead>
<tr>
<th>Location One: Grandview Park</th>
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Daytime Average 53 64

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Daytime Average 63 74

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Daytime Average 55.5 67

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Daytime Average 63 74
Table 3

Commercial Drive Area: Sunday Daytime Sound Levels by Monitoring Location

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**Daytime Average** 52 65

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**Daytime Average** 59.5 70

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**Daytime Average** 73 83
higher than equivalent A-scale readings: a clear indication of the significant low-frequency component of daily acoustic worlds. Despite the pervasive presence of low-frequency sound and vibration as a common element within almost all urban contexts, however, its impact on daily life and everyday routine currently remains unclear. Based on the preliminary findings assembled to date it may be hypothesized that low frequency sounds result in diffuse acoustic environments. Such sounds diffract around obstacles, and are not easily absorbed. Broadband sounds produced by cars and other vehicles serve further to diminish the complexity of local acoustic environments, as smaller sounds are effectively masked or drowned out by their uniform, repetitive rhythms.

Although the roar of traffic forms the dominant acoustic element throughout the study area, broad acoustic distinctions may be drawn between four major sub areas of the neighbourhood, each with its own distinct acoustic environment, the product of its physical form and the specific economic and social activities carried out there (Figure 18). Summarized briefly, the four major neighbourhood sub-areas are: first, the traditional shopping core located between Charles Street and Third Avenue; second, the mixed commercial, business and service sector located between Third and Seventh Avenues; third, the major community transportation corridors concentrated in the Grandview-Broadway area south of Seventh Avenue; and fourth, the residential areas that surround the commercial, service and transportation zones of the community.

5.2.2 Local Acoustic Environments

a) The Traditional Shopping Core

Despite the pedestrian orientation of the shopping core, reflected in the provision of a variety of ornate and elaborately decorated store fronts, the dominant sounds within this section of the Drive are those of the near constant
Figure 18

Commercial Drive: Acoustic Sub-Areas

1. The Shopping Core
2. Business and Service Sector
3. Grandview and Broadway Corridors
4. Residential Streets

0 \[\text{meters}\] 100

N
roar of traffic heading north and south on the Drive. The specific make-up of local traffic sounds is dominated by that of the car, which forms the most common vehicle on the Drive, and results in a local acoustic environment characterized by high sound levels and the broad-band roar of car engines. In addition to the near constant roar of car engines two further vehicle sounds stand out: the smooth drone of the trolley buses as they navigate up and down the Drive on a regular basis, and the low frequency, high intensity rumble of heavy trucks that pass through the neighbourhood along First Avenue (Figure 19).

Of the range of traffic sounds on the Drive, the sound of trolley buses is one of the most distinctive. The electric trolley buses running on overhead power cables rather than the more conventional gas or diesel engine, form something of an acoustic enigma among the more abrasive character of contemporary traffic sounds. The smooth falling and rising tone of the buses as they glide up to and away from the frequent stops that line the northern half of the Drive, are periodically superimposed over the rougher-edged roar of regular traffic flows. In addition to the smooth tone of the trolley buses, the rattle of the overhead wires as they move into and out of traffic lanes, and up to and away from the bus stops forms a further distinctive acoustic reminder of their presence.

Daily sound levels within the shopping core reflect the volume of local traffic flows, with the highest local sound levels in the vicinity of the major cross-town route of First Avenue. Average daily traffic volumes at the intersection of Commercial Drive and First Avenue are in the region of 40,000 vehicles heading east and west, with a further 20,000 heading north and south on the Drive (Figure 20). Daytime sound levels commonly exceed 75 dB(A) or 85 dB(C), with individual peak sound levels associated with the high intensity rumble of heavy trucks reaching above 85 dB(A) or 95 dB(C). At the perimeter of residential properties to the east of the intersection, the accumulation of high
Figure 19

Commercial Drive: Shopping Core Acoustic Environment

Sources of Music
1. Navare Restaurant
2. Paris Bakery
3. Arriva Restaurant
4. Highlife Records
5. Cafe Du Soleil
6. Liquor Store Street Musicians

Meeting Places
A. The Roma Cafe
B. Santa Barbara Grocery Store
C. Norman's Fruit and Salad
D. Il Mercato

Heavy Traffic Flows

0 50 meters

Charles Street
First Avenue
Third Avenue
Figure 20

Commercial Drive and First Avenue Looking East

Commercial Drive and First Avenue Looking West
intensity vehicle sounds results in a virtual 'wall of sound' which effectively drowns out all other sound events, and from which there is little or no respite throughout the day.

Daytime sound levels fall somewhat away from First Avenue, and outside of the local liquor store, between Grant Street and Graveley Street in the northern section of the shopping core, range from a high of 73 dB(A) or 82 dB(C) during the late afternoon rush hour period to a low of 65 dB(A) or 77 dB(C) in the early evening. South of First Avenue, between Second and Third Avenues, weekday daytime sound levels are slightly lower still, with an average daytime sound level of 66 dB(A) or 77 dB(C). The fall is related both to marginally reduced traffic flows, allied with the increased width of the street in this section of the Drive which results in less reflected sound from building facades. By contrast, the narrower width of the Drive north of First Avenue, along with the presence of shop awnings that protrude over the sidewalk, result in low frequency sound being reflected back onto the sidewalk, elevating local sound levels.

The north-south flow of traffic through the shopping core assumes an ebb and flow pattern, the result of the placement of a series of traffic lights along the Drive. The lights serve to regulate traffic flows in the core, with the result that periods of heavy traffic flows are interspersed with comparative lulls, as vehicles sit with their engines idling. The highest daytime sound levels coincide with the early morning and late afternoon rush hour periods, when increased traffic flows contribute to a near constant roar that engulfs the length of the core.

While the near-constant roar of vehicles heading north and south on the Drive dominates the acoustic environment of the shopping core, two further sounds add to the tempo and character of the street: music from the stores and businesses that congregate in the shopping core; and the periodic voices and
sounds of movement of the shoppers, including the jostling and carrying of bags. Music on the Drive 'springs' from a number of the restaurants, coffee shops and speciality stores that form the backbone of local business, as well as the daily rotation of street musicians who entertain both the patrons and passers-by of the busiest store on the Drive, the local liquor store. Within the various lulls of traffic the songs of the musicians rise and fall.

The different musical scores played out on the street, range from the classical and lyrical tones of Italian Opera, in the vicinity of the Roma Cafe on the corner of Grant and Commercial, to blaring ballads and sing-song melodies from the Navare Take-out Chicken Restaurant one block to the north. This continuous melody of background music that spills on to the sidewalks not only adds to the character of the Drive, but also serves as an advertisement for the specific goods or services available from individual stores. As one indication of this, the loudest music on the Drive originates from two of the local businesses that provide high volume, low cost take-out food: The Navare Chicken Restaurant and the Golden Boys Pizza Place between Third and Fourth Avenue. Music on the Drive assumes a greater presence as the day wears on, a result of the late morning or late afternoon opening hours of many of the restaurants and coffee shops, allied with the reduced traffic flows that characterize the evening periods.

In addition to the collage of musical sounds that enliven the sidewalks of the shopping core, the steady flow of pedestrians during morning and afternoon periods of the day (20 to 25 per minute during the noon hour), allied with their frequent congregation in specific meeting places, adds a small human element to the local acoustic environment. The animated sidewalk conversations of the patrons of the Roma Cafe on the corner of Grant and Commercial, for example, rise to near shouting and fall against the higher intensity roar of traffic on the
Drive. Additional meeting places also characterized by the periodic sounds of voices that unfold against the roar of local flows include the Santa Barbara Market between Charles and Kitchener, the environs of Norman's Fruit and Salad store on the corner of Graveley and Commercial, and the environs of the liquor store between Grant and Graveley.

The cultural diversity of the neighbourhood is reflected in the varied tone and rhythm of the voices from each of these different meeting places. Thus, the raised bass tones and animated expressions of the middle-aged Italian male clientele of the Roma Cafe, contrast with higher pitched voices of the predominantly younger, male and female patrons of the two grocery stores and the liquor store. As a variation on the outdoor location of these informal meeting places, the low ambient sound levels of the indoor Il Mercato Mall at the busy intersection of Commercial Drive and First Avenue, provide a sheltered arena away from the high intensity roar of cars and rumble of trucks that stream by outside.

While the voices of residents from the varied meeting places on the Drive are wedged between the higher intensity roar of local traffic flows, the flow of pedestrians through the retailing core adds a further human character to local acoustic environments. The voices of pedestrians as they pass through the core are interspersed between the peaks and troughs of local traffic flows. Additional sounds that accompany the periodic voices and footsteps of pedestrians include the intermittent rattle and scraping of nylon stroller wheels on the rough, and in places, uneven sidewalks, as well as the deeper, more rapid rumble of skateboard wheels. Both, are infrequent, however, and commonly drowned out by the roar of passing vehicles.

Despite the fluctuating presence of people sounds, as well as the variety of musical scores, the acoustic environment of the shopping core is, for the most
part, dominated by the high intensity predictable roar of traffic. Indeed, the acoustic diversity and vibrancy of the shopping core is ultimately threatened by this high intensity roar which frequently drowns out lower intensity sounds (Figure 21).

b) The Business and Service Zone

South of the shopping core, the local acoustic environment reflects the changes in local land uses that characterize the business and service section of the Drive. While the roar of traffic from the Drive once again dominates the local acoustic environment, the music that characterizes the northern portion of the Drive is lost, and the number of pedestrian sounds falls. Instead, these sounds are replaced by the periodic high intensity sounds, from individual businesses which filter onto the Drive (Figures 22 and 23).

Although lighter than in the shopping core to the north, the steady flow of local traffic nevertheless results in a pervasive fluctuating high intensity roar. Average daily sound levels reflect the volume of local traffic flows, and range from 65 dB(A) or 77 dB(C) during the early morning and late afternoon rush hour periods, to lows of 60 dB(A) or 70 dB(C) in the early evening. The smooth tone of local trolley buses once again stands out against the roar of traffic, and even assumes a somewhat greater prominence as a result of the slightly lower traffic flows that characterize this section of the Drive. Traffic lights at the intersection of Commercial and Sixth Avenue once again regulate the flow of traffic, and result in the periodic sounds of vehicles braking, tires squealing, vehicles gearing down and the revving of engines which are accentuated by the steeper slopes in this section of the Drive.

The diverse land uses between Third and Seventh Avenues result in an eclectic mix of sounds that ring out against the roar of traffic. Between Third
Figure 22

Commercial Drive: Business and Service Zone Acoustic Environment

Sources of Business Sounds
1. Auto-body
2. Auto Upholstery
3. Auto Parts and Service
4. Post Office
5. Grandview Bowling Lanes
6. Vancouver East Cinema

Heavy Traffic Flows

0 50 Meters

Grandview Highway
Figure 23

Commercial Drive: The 2100 Block in the Business and Service Zone Looking South

Commercial Drive: The 2100 Block in the Business and Service Zone Looking North
and Fourth Avenues, for example, the grinding and screeching of metal on metal, and banging and hammering, intermittently shoot out across the Drive from the auto-body repair shops located in this light industrially zoned section of the Drive.

Immediately south of Fourth Avenue the Drive resumes a service and commercial character, with an increase in pedestrians, and the absence of industrial sounds. Within this section of the Drive, pedestrian voices and activity from the post office area during the day, and the bowling lanes, Legion and Vancouver East Cinema in the evening add to the character of the local acoustic environment.

The post office forms a meeting place during weekday business hours, as local residents arrive to pick up their mail, and pause to chat outside. The close proximity of residential streets within this section of the Drive, further results in a small number of residential sounds drifting onto the Drive which include the raking and banging sounds of residents at work in their backyards, and the rasping sound of barking dogs.

Car doors slammed from within the small parking lot immediately to the north of the post office punctuate the flow of the local acoustic environment, while the associated revving of car engines contributes to periods of elevated local sound levels. In contrast, to these 'harsher' sounds, early morning and late afternoon periods include the ambient chirping of small birds from the row of holly bushes that line the western perimeter of the car park. For most of the day these 'smaller' sounds are drowned out by the roar from traffic on the Drive, and cars revving their engines in the parking lot.

One final sound that periodically filters into the local acoustic environment of this middle section of the Drive is the distant drone of the Skytrain as it enters and leaves Broadway Station one and a half blocks to the south. Despite the
frequency of Skytrain runs throughout the day, its characteristic smooth rising
and falling tone forms only an intermittent component of the local acoustic
environment, for much of the time drowned out by the higher intensity roar of
traffic.

c) The Grandview and Broadway Transportation Corridors

Within the final section of the Drive, between Seventh Avenue and
Broadway Avenue, the intersection of three major traffic routes, and the
juxtaposition of three separate modes of transportation, all within a short three
block stretch, result in a series of local acoustic environments almost
completely dominated by high intensity, broad-band transportation sounds
(Figures 24 and 25).

The junction of Commercial Drive and Broadway Avenue forms one of the
busiest intersections in the city, and is characterized by a local acoustic
environment crowded with high intensity transportation sounds. Daytime traffic
volumes are in the region of 45 000 vehicles heading east-west, and 26 000
north-south. The result in a near constant roar that reaches levels in excess of 70
dB(A) or 82 dB(C). The discrete sounds of individual vehicles blend together to
produce a melee of high intensity sounds that dominate the local environs. In
addition to the roar of vehicles, further traffic sounds that periodically rise above
the high intensity roar include the sharp blast of car horns, the intermittent
pounding bass beat of car stereos ("boomers"), the squeal of car brakes and the
piercing hiss of truck air brakes. The loudest sounds at the intersection are those
from the steady stream of heavy trucks that rumble along Broadway Avenue
into and out of the downtown area. The rough-grained rumble of trucks pulling
slowly away from the traffic lights at the intersection reaches sound levels of up
to 90 dB(A) or 101 dB(C) as measured on the adjacent sidewalk.
Figure 24
Commercial Drive: Grandview and Broadway Transportation Corridors Acoustic Environment
Figure 25

The Commercial Drive and Broadway Avenue Intersection Looking North
The roar from traffic contrasts with the more regular and smooth tone of the Skytrain as it enters and leaves the Broadway Station directly above the Avenue of the same name. During peak hour periods, the Skytrain schedule increases to one train every five minutes in each direction, thus making their higher frequency drone a regular element of the local acoustic environment. In addition to the Skytrain, the low throb of trains from the Grandview Cut, immediately to the north of the intersection, forms a less common element of the local acoustic environment that adds to the dominant low frequency oppressive acoustic character of the intersection.

North of the Broadway and Commercial intersection, adjacent to Grandview Highway and the Skytrain route, the roar of traffic continues, although local sound levels are lower, with a reduction in the density of sounds. Weekday daytime sound levels by the highway range from a high of 66 dB(A) or 79 dB(C) during the late afternoon rush hour period (1600 to 1730) to a low of 58 dB(A) or 70 dB(C) in the early evening (1930 to 2100), with an average daytime sound level of 63 dB(A) or 74 dB(C). Sunday sound levels vary from these weekday patterns, with the highest sound levels of 63 dB(A) or 73 dB(C) recorded in the afternoon (1400 to 1730), and the lowest in the early morning (0730 to 0900). The average Sunday daytime sound level is 59.5 dB(A) or 70 dB(C).

The dominant sound events adjacent to the highway include the frequent roar of vehicles heading into and out of Vancouver, the periodic smooth drone of the Skytrain as it either picks up speed, or slows down, on its way out of or into Broadway Station, the intermittent low rumble of the train from the submerged Grandview Cut immediately to the south, the near constant low intensity sound of birds singing and chirping from both the small bushes and trees north of the highway, as well as the much thicker growth of trees and
bushes along the perimeter of the railway cut, and the intermittent sound of pedestrian voices and footsteps. As background to these local sounds, the ambient rumble of middle distance traffic sounds from the Broadway and Commercial intersection to the south also forms a near permanent backdrop against which the local sound events unfold.

The relative openness of this portion of the neighbourhood, with primarily one and two storey buildings to the north of the highway and open space to the south and east, results in lower levels of reflected sound than on either the Drive or in the vicinity of the Broadway and Commercial intersection. The outcome is an acoustic environment characterized by intermittent high sound levels associated with the passage of individual vehicles, or groups of vehicles, interspersed with lulls and lower sound levels.

d) The Residential Streets

The residential streets that branch out from the Drive form relative acoustic 'havens' compared to the busy environs of the Drive and the major transportation routes that cross it. Lower sound levels, and a greater number of loud and soft, low and high frequency sounds characterize most streets (Figure 26).

The one and two storey elevations of the business premises that front the Drive for almost its entire length, from Charles Street in the north to Grandview Highway in the south, shield the residential streets from many sounds. As a result, average sound levels on streets off the main Drive are some 10 to 15 decibels lower than those in the commercial and business sections of the neighbourhood, and some 20 decibels lower than those adjacent to First Avenue in the heart of the community and Broadway on its southern periphery.

Residential streets off the northern portion of the Drive experience the lowest sound levels in the neighbourhood, a product of their limited roles as
Figure 26

Commercial Drive: Residential Street Acoustic Environments
local thoroughfares or feeder roads. By comparison, residential streets along the southern margins of the Drive, between Sixth and Eighth Avenues, have marginally higher sound levels as a result of their role as feeder routes, and their proximity to the major transportation corridors of Grandview Highway, the Grandview Railway Cut, the Skytrain route and Broadway Avenue.

Along the margins of residential areas, high intensity sounds from the Drive and the major transportation routes that cross it, forge onto local streets, and add a transportation or business flavour to acoustic environments. Sounds from the Vancouver East Cinema, for example, specifically those from the air conditioning unit on its roof, spill over into the residential environs of Seventh Avenue east of the building. Similarly, the sound of delivery trucks at the rear entrance of the Paris Bakery on the southwest corner of Kitchener and Commercial periodically invades the residential ambience of Kitchener Street to the west, while the sounds of cars and trucks on First Avenue flood into the residential streets to the north and south of this busy routeway.

The structure and composition of residential acoustic environments differs on streets to the east and west of the Drive. On the west side the steep slope of many streets down towards the False Creek basin results in the rumble of middle distance industrial activity from Vancouver's east side filtering onto residential streets. By contrast, residential streets to the east of the Drive blend into the neighbouring residential area of Grandview-Victoria, and, therefore, escape this ambient rumble (Figures 27 to 29).

Average sound levels to the west of the Drive are similar from street to street. On Kitchener Street, in the northern section of the study area, the average daytime sound level is 52 dB(A) or 64 dB(C), while on Fourth Avenue, it increases slightly to 53 dB(A) or 64 dB(C). Sunday sound levels are also similar on both streets. The most common sounds on both streets are the rumble of
Figure 27

The 1600 Block on Kitchener Street Looking West

The 1700 Block on Kitchener Street Looking East
Figure 28

The 1600 Block On Fourth Avenue Looking West

The 1600 Block On Fourth Avenue Looking East
The 1700 Block On McSpadden Looking West

The 1700 Block On McSpadden Looking East
middle distance traffic flows from the Drive, that includes the periodic drone of the trolley buses, and the chirping and chatter of small birds. In addition to these ambient sounds, less frequent foreground sounds include the roar of local traffic flows, the rumble of jet aircraft overhead, the footsteps and voices of local residents heading to and from the Drive, and the isolated call of train horns from the rail yards to the west.

Local sounds on Kitchener include the whine from lawnmowers, while on Fourth Avenue the extended strumming of an electric guitar was noted during the field research, as was hammering and banging from a local construction project one block to the south. Sundays on both streets are characterized by an increase in the number and variety of local bird sounds which include the cry of seagulls and the more frequent guttral, but cheerful clamour of crows. In addition, the generally lower Sunday sound levels throughout the community result in the distant sound of the Skytrain periodically filtering onto Fourth Avenue as it bends northward on its route into Vancouver. On Kitchener Street, intermittent Sunday sound events include children at play from apartment buildings at the eastern end of the 1600 block, as well as the banging sounds of transients sorting through garbage dumpsters at the rear of the stores on Commercial Drive.

The loudest sounds on both streets are those from vehicles heading to and from the Drive. On Kitchener Street, local vehicle sounds reach levels of up to 66 dB(A) or 77 dB(C), while on Fourth Avenue they are a little higher at 68 dB (A) or 78 dB(C) because of the loose gravel road surface which increases road-tire sound levels.

Average weekday sound levels on residential streets to the east of the Drive are similar. Again, there is a gradual increase moving south through the neighbourhood, which reflects the heavy traffic flows along its southern margins.
On Kitchener Street, in the northern section of the study area, average daytime sound levels are in the region of 51.5 dB(A) or 63 dB(C) which increase to 54 dB(A) or 65 dB(C) on Fourth Avenue, and 55.5 dB(A) or 67 dB(C) on Seventh Avenue on the southern periphery of the residential sections of the neighbourhood. Daytime sound level highs on all three streets coincide with the afternoon rush hour periods, while the lows on Kitchener and Fourth Avenue coincide with the early evening period and on Seventh Avenue the early afternoon (1400 to 1530). Sunday daytime sound levels are lower than their weekday equivalents on Kitchener and Seventh Avenue, and similar on Fourth Avenue.

A common base of sound events characterizes each of the three streets, which is further complemented by more idiosyncratic local sounds. On Kitchener Street, the most common sounds include the near constant rumble of middle distance traffic flows from Commercial Drive, as well as the local chirping and singing of numerous birds including those of sparrows, starlings, and less frequently the cry of seagulls. Periodic sounds include the roar of local traffic, the voices of pedestrians, the hourly peel of bells from the St. Francis of Assisi church on Napier Street to the north east, barking dogs, and the rumble of jet aircraft overhead. The buzz of seaplanes from the Burrard Inlet, and the distant wail of emergency vehicles from Victoria Street to the east are less common. A regular feature of weekday afternoons, are the shouts and cries from the bocce games played in Victoria Park, while on Sundays the various whines, roars and rattles of residents' lawnmowers sound out almost in defiance of the morning service church bells.

On Fourth Avenue to the south, the ambient rumble of traffic sounds from Commercial Drive and that of birds singing are joined by the raised voices of residents and children's shouts and cries from the school yard and playing fields
at the eastern end of the street. Sunday sound levels are similar, as many local residents use their weekend break to work on their automobiles parked on the street, as well as their front yards.

Along the residential margins of the neighbourhood, on Seventh Avenue, the most common sound events once again include the near constant rumble of traffic sounds from the Drive, which is further augmented by that of traffic flows from the Grandview Highway to the south. In addition, birds sounds once again form a near constant feature of the local acoustic environment, with the mature trees that line the street providing a natural vantage point for the crows, starlings and smaller house sparrows common to the other residential sections of the neighbourhood. In addition to the varied calls of these birds, however, the characteristic cooing of pigeons which nest in the eaves of the large three storey houses that line the north side of the street adds to the local acoustic character.

Periodic and intermittent sounds on Seventh Avenue include the smooth tone of the Skytrain from the Broadway Station area, one a half blocks to the south, the roar of local traffic flows, and the voices of pedestrians. Both of these last two sounds increase in the early evening with the start and finish of shows at the Vancouver East Cinema (now closed) on the corner of Commercial and Seventh Avenue. Other local sound events include the periodic barking of local neighbourhood dogs which are most common in this section of the community, where many homes have large backyards, and the early evening hammering and banging from local renovations. Sunday mornings are marked by the early morning bells from the Our Lady of Hungary Church located in the middle of the 1700 block on the southside of the street.

On all three streets to the east of the Drive, local traffic flows produce the highest local sound levels. On Kitchener Street, the roar of local traffic reaches levels of up to 65 dB(A) or 77 dB(C) as they head up to or away from the Drive,
while on Fourth Avenue they reach 64 dB(A) or 76 dB(C) and 70 dB(A) or 82 dB(C) on Seventh Avenue. Seventh Avenue has the heaviest local traffic flows of the three streets given its use as a local short cut and the presence of the Vancouver East Cinema on the corner of Commercial. The sound of individual vehicles is also greater in this southern section of the neighbourhood as a result of the steep gradient of the street, and the tendency of cars to speed.

Within Grandview Park, on the northern periphery of the study area, high intensity, traffic sounds dominate. Average weekday sound levels in the park range from 64 dB(A) or 76 dB(C) during the late afternoon rush hour period to 60 dB(A) or 74 dB(C) during the mid morning for an average daytime sound level of 62 dB(A) or 73.5 dB(C). Sunday daytime sound levels are four decibels lower than their weekday levels, and echo the lower traffic flows on the Drive itself, as well as those from across the neighbourhood as a whole.

The near constant broad-band roar of vehicles from the Drive forms the most common sound in the park, although the periodic lower intensity sounds of children's voices from the local playground and Britannia School, the chattering of birds from the numerous small bushes that crowd the eastern margins of the park, the drone of seaplanes from Burrard Inlet, and the rumble of jet aircraft overhead also help shape the character of the local acoustic environment. The rumble of trucks heading north and south on the Drive form the loudest sounds in the park, and regularly reach levels of up to 75 dB(A) or 85 dB(C) as they negotiate the steady rise up to Charles Street. The open character of the park site results in traffic sounds engulfing almost the entire physical area of the park, and forming the most pervasive and frequent element of the local acoustic environment (Figure 30).

On Sundays, the park has a different acoustic character as it becomes an activity centre for children and adults alike. During the late evening, and the day
Figure 30

Grandview Park Viewed from Commercial Drive Looking Northwest

The 1300 Block On Commercial Drive Viewed From Grandview Park
to a lesser extent, the park serves as an outdoor auditorium for the impromptu performances of numerous local musicians who use its natural setting as a stage on which to perform. Sunday evenings in the park include the lonely sounds of saxophone music, as well as the more up-beat rhythms of African drum music.

The dominance of traffic sounds in the park results in a local acoustic environment that is made up primarily of low frequency, high intensity sound; although the ambient presence of local bird song adds a softer, high frequency component to the local setting. The acoustic environment of the park is one of contrasts, with high intensity, low frequency traffic sounds com mingled with children's voices and ambient birdsong. The roar of traffic 'crowds' the park, with smaller sounds wedged between the roar of passing vehicles. While the park forms a partial visual oasis within the predominantly grey built environment of the Drive, acoustically it merges with the busy streets that surround it.

5.3 False Creek

5.3.1 Introduction

The local acoustic environments in False Creek include quiet, enclosed residential spaces, exposed waterfront walkways, and an open central park area, all defined within the circular embrace of traffic roars from the major arterial roads and bridges that surround the local area. Paradoxically, the most obvious feature of many local acoustic environments within the complex is the absence of local traffic sounds. The general absence of cars from all but the periphery of the site results in local acoustic environments free, in large part, from local traffic sounds, although they do not escape the rumble of more distant traffic flows which pervades the entire community. Indeed such sounds echo False
Creek's link to the expanded tertiary and quarternary sectors of downtown Vancouver which provided one of the major thrusts for its development.

The most common local sound events include the roar of local traffic flows along the periphery of the site, drilling and hammering from ongoing construction projects in the eastern half of the community; the voices and footsteps of pedestrians and joggers along the waterfront; the cries of seagulls from along the waterfront and in the marina areas; the honking of geese by the lake in the park; the rumble of heavy machinery from the cement plant on Granville Island; the shouts of children from residential enclaves and the school environs; the distant call of train horns from the CPR sheds, roadhouses and terminals to the north and east of the inlet; the periodic buzz of seaplanes overhead; and the noon hour blast of the O Canada Horn from atop of the BC Hydro Building on Burrard Street downtown.

The size and physical diversity of the Creek, as well as its juxtaposition alongside different neighbouring land uses, contributes to a diverse range of local acoustic environments. Average daytime sound levels range from a low of 50 dB(A) or 63 dB(C) in enclosed, sheltered residential areas, to 70 dB(A) or 82 dB(C) along the traffic dominated perimeter. Average sound levels fall by some 5 to 7 decibels on Sundays, as traffic flows on the major routeways surrounding the site are reduced (Figures 31 and 32 and Tables 4 and 5).

Daily fluctuations in sound levels reflect both the increased traffic flows of the morning and afternoon rush hour periods, as well as changes in the micro-climate of the Creek area. In the early morning, the stillness of the Creek results in traffic sounds from the Granville and Cambie Street Bridges, as well as those from the downtown core, spreading into the waterfront sections of the community. By mid-day, westerly breezes alter the complexion of distant traffic sounds, with the rumble of traffic from the Granville Street Bridge on the west
Figure 31
False Creek: Average Weekday Daytime Sound levels

0 - 100
meters

N

dB(A)

70 65

70 65

55

75 70 65

80

dB(C)
Table 4

False Creek Area: Weekday Daytime Sound Levels by Monitoring Location

<table>
<thead>
<tr>
<th>Location One: Hemlock Court</th>
<th>Location Five: Forge Walk</th>
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<tbody>
<tr>
<td>Time Period</td>
<td>dB(A)</td>
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<tr>
<td>Daytime Average</td>
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<table>
<thead>
<tr>
<th>Location Two: Alder Bay Court</th>
<th>Location Six: Ironwork Passage</th>
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<tr>
<td>Time Period</td>
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<tr>
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<tr>
<th>Location Four: Island Park Way</th>
<th>Location Eight: Central Park (by the lake)</th>
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<td>Time Period</td>
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<td>Eleven: Millbank Road</td>
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<td>Location Twelve: Wheelhouse Square</td>
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Table 5

False Creek Area: Sunday Daytime Sound Levels by Monitoring Location

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<th>Location One: Hemlock Court</th>
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<th>Location Six: Ironwork Passage</th>
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<td>Time Period</td>
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Table 5

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<th>Location Nine: Charleston Road</th>
<th>Location Thirteen: Commodore Road</th>
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<tbody>
<tr>
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<td>Daytime Average</td>
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<thead>
<tr>
<th>Location Ten: Sawcut Way</th>
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<td>Daytime Average</td>
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<thead>
<tr>
<th>Location Eleven: Millbank Road</th>
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<tbody>
<tr>
<td>Time Period</td>
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<td>Daytime Average</td>
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<thead>
<tr>
<th>Location Twelve: Wheelhouse Square</th>
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<tbody>
<tr>
<td>Time Period</td>
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<td>1</td>
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<tr>
<td>Daytime Average</td>
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side engulfing almost the entire waterfront.

As a reflection of this, average C scale sound levels throughout the study area are ten to sixteen decibels higher than the equivalent ‘A’ scale readings. This considerable difference reflects the complete surround of the Creek by major road networks, as well as the overall bowl or basin shape of the False Creek area and its immediate environs. The combination of these two factors results in low frequency sound becoming trapped within the larger bowl structure, and hence the formation of local acoustic environments pervaded by low frequency sound.

Based on the character and structure of local sounds, four major acoustic sub-regions may be identified, each with its own broadly distinctive acoustic environment, the product of the varied functions carried out there, the physical form of the local area as well as its broader relationships with distant sound sources. The four regions include the three residential neighbourhoods of Heather, Alder and Spruce; the exposed waterfront walkways and marinas; the 16 acre park situated in the middle of the community; and the traffic dominated peripheral zones and major thoroughfares that surround the site (Figure 33).

5.3.2 Local Acoustic Environments

a) The Residential Areas

The 16 acre park and playing field in the centre of False Creek divides the area into two halves, the two neighbourhoods of Spruce and Alder in the west, and the third of Heather in the east. While the two halves share some common acoustic characteristics, such as the rumble of distant traffic sounds, there are also individual differences which reflect the varied character of each (Figures 34 and 35).
Figure 33
False Creek: Acoustic Sub-Areas

Acoustic Sub-Areas
1. Residential Neighbourhoods
2. Waterfront and Marinas
3. Park Area
4. Peripheral Regions
Figure 34

False Creek: Heather Neighbourhood Acoustic Environment

Major Sound Sources
1. Heather Marina
2. Leg-in-Boot Square
3. Standing's Pub and Restaurant
4. Construction Sites
5. Local Book Bus

Distant Traffic Flows
Heavy Traffic Flows
Moderate Traffic Flows
Figure 35

False Creek: Spruce and Alder Neighbourhood Acoustic Environments

Major Sound Sources
1. Granville Island Recreational Centre
2. Cement Plant
3. Spruce Marina
4. False Creek Elementary School
5. Children Playing

Traffic Flows

Heavy Traffic Flows

0 50 meters
In terms of similarities, both the Spruce and Heather Neighbourhoods are characterized by important differences between their interior and exterior regions, a result of the semi-circular or "doughnut shape" of the individual housing enclaves. The internal spaces of the enclaves, with their enclosed courtyards and narrow passageways, are sheltered from many of the sounds that characterize the more open peripheral regions of the local area (Figure 36). By contrast, the open fronts and backs of both neighbourhoods are exposed to the sounds of distant traffic flows, as well as those from the margins of the community itself. While the local acoustic environments of both the Spruce and Heather Neighbourhoods both reflect this core-periphery or sheltered-exposed, acoustic profile, important differences exist between the nature and rhythm of the local sound events in each of them.

The western neighbourhoods of Spruce and Alder, for example, with their greater proportion of non-market and agency-sponsored housing, are characterized by a higher density of people-sounds that reflect both the social profile of the neighbourhoods as well as their unique physical layout and design. The shouts and cries of children at play, from the environs of the schoolyard, as well as from the narrow and enclosed confines of the residential courtyards, form periodic elements of local acoustic environments. Added to these are adult voices and occasional cheers from tennis matches at the Granville Island recreational centre, located just across the arm of the Creek, which regularly spill over into the waterfront sections of both neighbourhoods. Sounds travels easily across water, and hence these sounds may be clearly heard.

By contrast, people sounds in the Heather Neighbourhood, with its focus on market rental and owner-occupier condominiums, are less common, particularly during weekday business hours, when many residents are at work. Music and voices from the Standing's Pub in Leg-in-Boot Square, as well as from the
Heather Neighbourhood: Millyard Looking West From Sawcut

Spruce Neighbourhood: Forge Walk Looking East from the Castings
restaurant adjacent to the eastern marina do, however, form regular components of waterfront acoustic environments, their sounds spilling over into the otherwise quiet residential areas to the south and east of the marina. In the Spruce and Alder Neighbourhoods, early evening people-sounds are largely absent, with no local 'night life' reflecting the family focus of these neighbourhoods.

In addition to differences in the mix of people-sounds, neighbourhoods also differ in their exposure to local traffic sounds. High intensity, low frequency vehicle sounds from local traffic are more common in Heather than in Spruce or Alder. Moberly Road, which bisects the Heather Neighbourhood, acts as a local feeder road, and branches off into the local bus terminal. Average daily sound levels within the environs of Moberly Road reach up to 65 dB(A) or 77 dB(C), with local residents using this road to start their short journey downtown. The roar of car engines is prolonged by the highly reflective nature of the built environment, with concrete-faced high rises fronting directly onto Moberly Road, and arranged in narrow corridors. By contrast, cars are assigned to the periphery of the Spruce and Alder Neighbourhoods, and thus largely absent from local acoustic environments.

While traffic sounds are a feature of the Heather Neighbourhood alone, both residential halves of the Creek bear the impact of additional technological or mechanical sounds, although the sources of these differ. In Spruce, the low intensity rumble of heavy equipment from the small remaining enclave of industry on Granville Island, the cement plant sited on its south-eastern tip, filters into the community and forms a near constant element of the daytime acoustic environment. This ambient rumble raises average daily sound levels along waterfront and residential areas close to Granville Island which reach up to 62 dB(A) or 74 dB(C).
Similarly, within Heather, sounds from ongoing construction form a common component of daily acoustic worlds. Construction activity, and the hammering, drilling and roar of generators associated with it, are largely confined to the northeastern fringes of the residential area, as construction crews work on three separate projects each at a different stage of completion.

With the exception of construction sounds in Heather, and a small number of residential sounds in Spruce and Alder, the local acoustic environments of all three are, in large part, the product of sounds that originate from outside of the local area. This absence of local sounds gives each neighbourhood something of a generic or anonymous acoustic ambience that reflects their deliberate physical design and socially engineered mix. Thus, while local real estate advertisements for individual units emphasize the dramatic and striking views from much of the site, as well as its close proximity to the downtown area and west-side, they generally make little mention of the local community flavour and ambience which remain largely engineered, and acoustically poorly defined.

Average weekday sound levels in Spruce and Alder follow a broad core-periphery structure, and reflect the limited number of local activities that unfold in each neighbourhood. At Alder Bay Court, just to the south of the Alder Bay Co-op, and adjacent to Lamey's Mill Road, daytime sound levels range from a high of 60 dB(A) or 71 dB(C) during the early morning rush hour to a low of 54 dB(A) or 69 dB(C) during the early evening, for a daytime average of 57 dB(A) or 70 dB(C). On Forge Walk, in the heart of the Spruce Neighbourhood, average sound levels are six to seven decibels lower, reflecting the sheltered nature of the physical environment. At School Green Road, on the exposed southeastern periphery of the Spruce Neighbourhood, average weekday daytime sound levels increase to 61 dB(A) or 72 dB(A), the result of heavy traffic flows on Charleston Road and Sixth Avenue to the south. Sunday sound
levels at all three sites are much lower than their weekday equivalents, with average daytime sound levels falling some four to six decibels, in direct correspondence to reduced traffic flows.

The rumble of distant traffic is common to both neighbourhoods. At Forge Walk, the low intensity rumble of traffic from the Granville Bridge to the west forms an ambient component of the local acoustic environment, while at both Alder Bay Court and on School Green Road the higher intensity rumble of traffic flows from Sixth Avenue are prominent. In addition to the rumble from these distant traffic flows, the roar of local vehicles is a common feature of local acoustic environments at both Alder Bay Court and School Green Road, as vehicles speed by on Lamey's Mill Road. The individual vehicle sounds at both sites include the rough-edged diesel engine roar from the local buses, the rumble of local delivery trucks, and the blaring sound of emergency vehicle sirens from Sixth Avenue to the south.

On Forge Walk, the high frequency, low intensity sound of birds singing represents a further near constant element of the local acoustic environment, punctuated by the intermittent cry of seagulls from the waterfront. At Alder Bay Court, the chirping of small birds is again pervasive, emanating from the large number of small bushes and trees that surround the local car park. The periodic sound of small birds on School Green Road is augmented by the less regular but more dramatic cries of seagulls, as well as the noisy clamour of crows. The gentle rustle of blowing, and the wind itself adds to the natural ambient sound on Forge Walk.

The voices and shouts of residents and visitors also characterize all three sites. On Forge Walk they form only intermittent elements of the local acoustic environment, and are primarily those of adults. At both Alder Bay Court and School Green Road, the number of voices increases considerably, the majority
being children's.

The loudest sounds at each of the three sites include the buzz of the seaplanes on Forge Walk which reach levels of up to 61 dB(A) or 73 dB(C), and that of traffic heading east or west on Lamey's Mill Road at both Alder Bay Court and School Green Road, resulting in local sound levels of 75 dB(A) or 86 dB(C) and 76 dB(A) or 88 dB(C) respectively.

The temporal and spatial patterns of weekday sound levels in the Heather Neighbourhood are similar to those of Spruce and Alder. On the sheltered, pedestrian-oriented Sawcut Way, at the heart of the Heather Neighbourhood, average weekday sound levels range from 54 dB(A) or 65 dB(C) during the afternoon rush hour, to a low of 49 dB(A) or 62.5 dB(C) in the middle of the morning. These increase by eight decibels in the environs of Wheelhouse Square to the east, and by a further two decibels at Spyglass Place on the periphery of the study area. As within the western half of the Creek, Sunday sound levels are consistently lower than their weekday equivalents.

The most common sound events on individual residential streets reflect the varied form and function of the local setting, as well as the broader location of the neighbourhood itself. The rumble of distant traffic flows, for example, forms a near constant element of all local acoustic environments, as it does in the western half of the Creek. At Spyglass Place, next to the Cambie Bridge, the rumble reaches its highest levels, while on the sheltered Sawcut Way it is at its lowest. As a variation of this ambient rumble, the higher intensity roar of local traffic flows also forms a component of local acoustic environments, although the intensity and density of such sounds reflects the local form and function of individual sites. Thus, the intermittent roar of cars parking in the small square east of Sawcut and the late afternoon visits of the Book Bus, contrast with the periodic arrivals and departures of heavy trucks from the construction site
immediately to the north and west of Wheelhouse Square, and the periodic flow of cars in the environs of Spyglass Place.

In addition to differences in local traffic sounds, the acoustic environments of the neighbourhood also echo further variations in local activities. In Wheelhouse Square, for example, the low frequency throb of electrical generators, the periodic sounds of hammering and drilling from the construction site immediately to the north, as well as the low frequency hum from building air conditioning vents placed at street level, all combine to dominate the local acoustic environment for extended periods of time. By contrast, evenings in the Square are accompanied by much lower ambient sound levels with the intermittent sounds of voices from children at play on and around the construction site.

On Sawcut Way, the most frequent sound events include the near constant low intensity sound of birds singing from the variety of small bushes that line the sidewalk, as well as the less frequent sounds of resident footsteps and voices and the cry of seagulls from the marina and creek areas to the north. On Spyglass Place, below the Cambie Street Bridge, the high intensity roar of local traffic flows and the rumble of vehicles on the bridge dominate the local acoustic environment.

At each of the three sites, the loudest sounds are those from local traffic. The roar of the Book Bus is the loudest sound on Sawcut Way, which reaches levels of up to 68 dB(A) or 80 dB(C) measured at a distance of 25 meters during its afternoon visits. In Wheelhouse Square, the rumble from heavy trucks bringing materials to the construction site reach levels of 76 dB(A) or 88 dB(C), while individual cars travelling north and south on Spyglass Place generate sound levels of 74 dB(A) or 85 dB(C).
b) The Park

The park in the centre of False Creek contains two broad acoustic environments which match its intended uses. The eastern half of the park is characterized by a series of natural sounds which unfold against the ambient rumble of distant traffic flows. By comparison, the acoustic environment of the western half of the park, with its baseball diamond and playing field, includes a much greater variety and number of people-sounds as well higher ambient sound levels associated with local traffic flows on Charleston Road immediately to the south (Figures 37 and 38).

Average daily sound levels in the eastern half of the park, by the lake, range from 53 to 56 dB(A) or 67 to 72 dB(C) for a daytime average of 54 dB(A) or 69 dB(C). These fall by 3 or 4 decibels on Sundays to a daytime average of 51 dB(A) or 65 dB(C). The major local sound events include the near constant low intensity hum of distant traffic flows from the Granville Bridge to the west, and from the southern periphery of the downtown core from across the Creek. In addition to this background hum, the rumble of industrial activity from the Granville Island cement plant forms a second near constant element of the local acoustic environment, while the richly textured sound of running water from the small stream and waterfall a third. The constant flow of water adds a natural ambience to the local context and serves, in part, to balance the low frequency, repetitive rumble of distant traffic sounds, and industry from Granville Island that pervade the lake and its environs. Periodic sounds adjacent to the lake, which punctuate these background sounds, include the varied calls of geese, mallard ducks and seagulls. Intermittent sounds include the occasional barking of dogs, pedestrian footsteps and voices, and the distant blasts of train whistles.

Daily sound levels in the western portion of the park reflect its more active role, and range from 54 dB(A) to 58 dB(C) or 69 dB(A) to 73 dB(C), for an
Figure 37
False Creek: Park Acoustic Environment

Major Sound Sources
1. Playing Fields
2. Lake and Stream
3. School and the school yard
4. Pedestrians and Cyclists

Heavy Traffic Flows

Distant Traffic Rumble

0 50 meters
N
Figure 38

False Creek Park and Elementary School Looking Northwest

The Park Lake Looking Southeast
overall daytime average of 56 dB(A) or 71 dB(C). Equivalent daytime sound levels for Sundays are lower at 51 dB(A) or 67 dB(C). As within the eastern half of the park, the higher intensity periodic or intermittent local sound events unfold against a backdrop of distant vehicle sounds; although within the western section, it is the voices and shouts of local residents and ball-players that form the most common local sounds rather than the natural sounds that characterize the eastern half. Particular local sounds include children's voices from the school yard and adjacent playing fields, as well as the less frequent sound of residents either out walking, jogging or cycling along the footpaths that bisect the open areas. The sound of children's voices follows the pattern of the school day, with the majority of voices concentrated during either the recess period or immediately before and after the start and conclusion of the school day. In addition to the local peaks of acoustic activity associated with the school day, weekday evenings also include the shouts and cries from baseball games played on the local diamond.

In addition to the periodic sounds of people at play in the western half of the park, a smaller number of natural sounds also form part of the local acoustic environment. As within the eastern section of the park, these sounds include the characteristic honking of Canada geese, the cries of seagulls and to a lesser extent the squawking or clamour of crows. These less frequent natural sounds are occasionally drowned out by the roar of vehicles from Charleston Road immediately to the south, which masks local sounds, as it reach levels of up to 63 dB(A) or 75 dB(C). During peak hour periods, the roar of vehicles, from the moderate to heavy traffic flows on Charleston Road, constantly spill over into the park area and serve to emphasize its inner city rather than suburban location. One occasional but infrequent reminder of the land-water orientation of the park and its site is the middle distance sounds of boat motors from the Creek.
c) The Waterfront Walkways and Marinas

The acoustic environments of the walkways and marinas are made up of a variety of local sounds, as well as those from sources outside of the local area. The ambient rumble of traffic sounds from the busy Granville Street Bridge engulfs almost the entire waterfront. In addition, the rumble of distant traffic flows from the downtown ring-road to the north, also spreads across the surface of the creek and adds to the traffic ambience. The roar from the cement plant adds a further low frequency element to the acoustic environment (Figure 39).

By way of contrast to the near constant, background, repetitive, and low frequency sounds of traffic and industry, the acoustic environments of both the western and eastern portions of the waterfront also include a variety of people sounds that reflect the recreational character of this section of the community (Figure 40). The voices and footsteps of pedestrians and joggers, as well as the rapid whir of bicycle wheels thus form regular components of the daily acoustic routine, as all three pass along the walkway at varying speeds. In terms of the frequency of occurrence of individual sound events, the number of joggers increases significantly during the weekday noon hour and early evening periods, as well as on weekends when much larger numbers of pedestrians and cyclists also appear. Sundays along the waterfront are characterized by increased numbers of pedestrians, and as a result a greater number of people-sounds. In addition, reduced background traffic flows, and the weekend shut-down in local industry, reduce the local sound levels to some three to seven decibels below the weekday equivalents.

To the west of the Spruce Marina, on Island Park Walk, average daytime sound levels range from a high of 60 dB(A) or 71 dB(C) during the afternoon rush hour period to a low of 55 dB(A) or 66 dB(C) during the early evening, with an average daytime sound level of 58 dB(A). Adjacent to the Spruce
Figure 39: False Creek: Waterfront and Marina Acoustic Environments

- Distant Traffic Rumble
- Major Sound Sources
  1. Cement Plant
  2. Granville Island Recreational Centre
  3. Heather Marina
  4. Spruce Marina
  5. Joggers, Pedestrians and Cyclists

0-100 meters
Figure 40

False Creek Waterfront Looking West Along Island Park Way

False Creek Waterfront Looking East from Ironwork Passage
Marina, on Ironwork Passage, daily sound levels are some three decibels lower with a high of 58 dB(A) or 70 dB(C) in the early afternoon and a low of 53 dB (A) or 65 dB(C) in the early evening. At the eastern end of the study area, by the Heather Marina, average daytime sound levels range from a high of 58 dB(A) or 71 dB(C) in the late afternoon to a low of 52 dB(A) or 64.5 dB(C) in the mid-morning. The average daytime sound level is 56 dB(A) or 68 dB(C). At all three sites, average Sunday daytime sound levels are some two to ten decibels lower than their weekday equivalents.

Variations in average daily sound levels along the waterfront reflect the nature of the local activities that take place there. On Island Park Walk, for example, the most common sound events include the rumble of traffic flows from Granville Bridge to the west, and the low frequency rumble from the cement plant on Granville Island. Periodic sounds include the voices and footsteps of pedestrians and joggers, which both increase during the noon hour and late afternoon periods, the cry of seagulls from the creek and the chirping of smaller birds from the bushes to the south of the walkway itself. Intermittent sounds thus form less common events throughout the day include the animated shouts of tennis players from the courts on Granville Island, the squawking of crows, the drone of seaplanes overhead, and the whir of cyclists speeding along the walkway.

To the west of Island Park Walk, by Forge Walk, the most common local sound events once again include the near constant rumble of traffic flows from the Granville Bridge, as well as those from the southern periphery of the downtown core from across the inlet. In addition, the rumble from the Granville Island cement plant, again forms a near constant component of the local acoustic environment, as does the clinking of sail hardware on aluminum boat masts as the boats rock in the moving water. Periodic sounds include the footsteps and
voices of pedestrians. Intermittent sounds include the roar of boat engines, hammering and banging from the marina as members work on their boats, the drone of seaplanes and the rumble of jet aircraft overhead.

The predominant local sounds by the eastern Heather Marina (Figure 41) are similar to those of both Island Park Way and Forge Walk. The rumble of distant traffic sounds once again forms a near constant element of the local acoustic environment, although at the eastern end of the community, the rumble is primarily from the southern periphery of the downtown core rather than the Granville Bridge to the west. Similarly, the clinking of boat masts adds to the local ambience, although this is joined by the periodic ringing of small bells attached to the masts of the numerous boats moored in the marina. Intermittent sounds include the voices and footsteps of pedestrians, the drone of seaplanes, and the honking of geese as they fly overhead. During the early evening period, music and voices from the Standing's Pub also spill over into the marina area.

The local acoustic environments of the waterfront, thus, include an eclectic combination of traffic, industrial, people and natural sounds. The relatively low ambient sound levels mean that the sounds from local events clearly stand out, with the distinctive sounds of the marinas confirming the recreational orientation of this section of the local area. All along the waterfront, the daily blast from the O Canada horn and the distant call of train horns form additional components of the local acoustic environment.

d) The Perimeter or Peripheral Areas

By contrast to the relative tranquility of the waterfront, park and interior residential sections of the Creek, local acoustic environments along its perimeter are dominated by the high intensity roar from heavy local traffic flows (Figures 42 and 43). As a result, average daytime sound levels are much higher in these
Figure 41

Heather Marina Looking North from Leg-in-Boot Square

Heather Marina Looking West from Millbank
False Creek: Peripheral Margins Acoustic Environments

Heavy Traffic Flows

0 - 100 meters
Figure 43

Charleson Road Looking West Toward the Oak Street Crossover

Lamey's Mill Road Looking North from Alder Crossing
perimeter regions, and stand in stark contrast to those of the quieter, more sheltered interior sections of the Creek. At Hemlock Court, on the edge of the Alder Bay Neighbourhood, for example, daytime sound levels range from a high of 65 dB(A) or 77 dB(C) during the late afternoon rush hour period, to a relative low of 61 dB(A) or 74 dB(C) in the early evening. Further east, by Alder Crossing, daytime sound levels increase marginally with a daytime high of 66 dB(A) or 75 dB(C), and a low of 62 dB(A) or 73 dB(C). Average daytime sound levels at both locations are 63 dB(A) or 75 dB(C) and 64 dB(A) or 75 dB(C) respectively.

The highest local sound levels are concentrated along Charleston Road, the narrow access road that leads to the eastern portion of the Creek, and runs parallel to the busy Sixth Avenue to the south. Daytime sound levels along this confined roadway range from a high of 72 dB(A) or 84 dB(C) during the afternoon rush hour period, to a low of 66 dB(A) or 75 dB(C) in the middle of the morning, with an average daytime sound level of 70.5 dB(A) or 80.5 dB(C). Daytime sound levels fall on the eastern edge of the community at Commodore Road, where local sound levels range from 65 dB(A) or 78.5 dB(C) to 58 dB(A) or 74 dB(C).

The roar of traffic forms the dominant sound along these margins of the community. At Hemlock Court the near constant roar of traffic from the elevated sections of the Granville Street bridge dominates the local acoustic environment, with the additional rumble of more distant traffic sounds from Sixth Avenue to the south adding to the traffic ambience. By Alder Crossing, the near constant rumble of traffic from Sixth Avenue is the dominant sound, with the periodic roar of individual vehicles on Lamey's Mill Road forcing its way through these background sounds. The slight elevation of this section of the Creek further results in the distant rumble of traffic flows from the Granville
Street Bridge also forming part of the local acoustic environment.

On Charleston Road it is the high intensity roar of local traffic flows which once again dominates the local acoustic environment. This pervasive roar is further combined with the background rumble of heavy traffic flows on Sixth Avenue. The result is a local acoustic environment that is both repressive and alienating. Finally, on Commodore Road the local acoustic environment is again dominated by local traffic sounds, although the density of sounds is reduced somewhat from the confined narrow environs of Charleston Road.

While the roar of traffic dominates the majority of local acoustic environments along the perimeter, a small number of additional sounds are wedged between these dominant sounds. By Hemlock Court, the periodic singing of birds, the intermittent rumble of jet aircraft overhead, the drone of seaplanes and the distant blare of emergency sirens also form part of the local acoustic environment, although they remain largely overwhelmed by the pervasive presence of traffic sounds. Bird sounds also form periodic elements of the Alder Crossing acoustic environment, as do the intermittent voices of local residents and pedestrians. On Charleston, traffic sounds dominate the acoustic environment masking almost all other local sounds, while on Commodore Road, the periodic sounds of birds, the whir of cyclists speeding by and the rattle of underground parking doors opening and closing form additional periodic or intermittent elements of the local acoustic environment.

Sundays along the perimeter are marked by a partial respite from the elevated sound levels that characterize weekdays. Average sound levels fall by five to seven decibels from their weekday equivalents, with the major reason for the decrease the reduction in local traffic flows. At Hemlock Court and Alder Crossing, the reduction in local traffic flows is accompanied by increases in local bird and people-sounds.
Daytime sound levels along the perimeter are considerably higher than equivalent levels recorded for the waterfront, residential and park areas. Half a block east of the busy intersection of Lamey’s Mill and Anderson Street, and beneath the access roads which lead onto the Granville Street Bridge, for example, daytime sound levels range from between 62 to 66 dB(A) or 74 to 77 dB(C) for an overall daytime average of 63 dB(A) or 75 dB(C). Traffic sounds, particularly those of cars, buses and trucks are a constant feature of the local acoustic environment from early morning until late evening. Even after eight o’clock at night traffic flows remain constant with local sound levels generally in excess of 60 dB(A). The only comparative respite from the near constant traffic flows occurs during weekdays after midnight, and during the early hours of Sunday mornings when average sound levels fall to 55 dB(A) or 67 dB(C), a level similar to that experienced in the local park area during its daytime periods. Overall daily sound levels for Sunday, however, reflect the increased traffic flows of the major portion of the day and remain at about 60 dB(A) or 71 dB(C).

While it is the heavy flows of traffic on the Granville Street Bridge, and its access roads, that shape the acoustic character of the western peripheral regions of the Creek, the loudest individual sounds are from local traffic flows on Lamey’s Mill Road. By Hemlock Court, the sound of individual vehicles, measured adjacent to ground floor condominium balconies and windows, reaches up to 76 dB(A) or 87 dB(C), with the roar of the local bus service even louder. Not surprisingly, the majority of local residents whose condominiums and co-operative housing suites or apartments front this array of local and city-based thoroughfares, make little use of their balcony spaces and, further, leave the majority of south and west facing windows closed. The five-storey height of the majority of residential blocks that border Lamey’s Mill Road
within the south-eastern portion of the development helps to create something of an acoustic shadow for the blocks located immediately to their north. In this capacity, they serve to shield the interior residential structures and spaces from the full impact of local traffic sound.

Further east, by Alder Bay Court and Alder Bay Crossing, local traffic flows on Lamey’s Mill Road are augmented by the heavy traffic flows from Sixth Avenue approximately half a block immediately to the south again. The effect of these traffic flows from Sixth Avenue on local acoustic environments is considerable, and heightened further still by the presence of large numbers of heavy goods vehicles which contribute to local peak sound levels which reach in excess of 80 dB(A) or 90 dB(C), and daily sound levels for afternoon peak hour periods of between 67 to 72 dB(A) or 77 to 84 dB(C). Of the individual vehicle sounds on Lamey’s Mill Road, it is those from the local transit buses and local service vehicles (for example the book bus) which reach the highest levels - up to 82 dB(A) or 92 dB(C) measured at the periphery or street-facing wall of individual residential units.

Along the eastern periphery of the Creek, there is a slight respite from the high local sound levels and heavy traffic flows. In the environs of the Cambie Street Bridge, the dominant component of the local acoustic environment remains the sound of traffic as it heads into and out of the city centre. On the eastern and south-eastern margins of the site daily sound levels vary from between 58 to 65 dB(A) or 70 to 79 dB(C), for an overall daytime average of approximately 60 dB(A) or 74 dB(C). These slightly lower daytime sound levels, as compared to the western and southern margins, are a result of lighter traffic flows on the bridge itself, allied with the predominantly westerly breeze that dominates the local micro-climate of the inlet.

As within the western periphery of the site, the elevated heights of the
major housing developments that front the periphery of the site, generally five to eight storeys, serve in part to shelter the inner assortment of residential blocks from much of the impact of local traffic sounds. Average daytime sound levels in the more sheltered residential enclaves are thus five to ten decibels lower than those along the periphery. The somewhat oppressive acoustic environment of the eastern periphery is echoed in its visual characteristics. Sightlines from units that face the Cambie Street Bridge, for example, are restricted to views of the older sections of Vancouver’s east-side. The relative unattractiveness of this portion of the Creek is reflected in a cluster of "for sale" signs.

5.4 Ambleside, West Vancouver

5.4.1 Introduction

The local acoustic environments of Ambleside are a product of the area's major functional characteristics, allied with the unique aspects of its physical site. The most pervasive sounds across the neighbourhood are those from the heavy traffic flows along Marine Drive, the major local thoroughfare which separates the natural and recreational acoustic environments of the waterfront area, with its parks and walkways, from the relative tranquillity of the steeply sloped residential streets to the north. The local acoustic environments of a large portion of the neighbourhood bear the imprint of the heavy traffic flows on Marine Drive, which spill over into the waterfront sections, and northward into the residential areas. The emergence of both Fifteenth and Seventeenth Streets as major north-south routes further extends the influence of traffic sounds away from Marine Drive and into the residential sections of the neighbourhood. The major impact of traffic sounds on local acoustic environments is reflected in the pattern of local sound levels which generally decrease as distance from Marine
Drive increases, with high rise developments to the north and south of the drive providing a partial acoustic shadow for the waterfront and residential areas (Figures 44 and 45, Tables 6 and 7)

Across much of the neighbourhood, the roar from heavy local traffic flows is augmented by the near constant low intensity rumble of distant traffic flows from the Lions Gate Bridge to the east and, more generally from the harbour industry and shipping. Some indication of the pervasiveness of vehicle sounds from the Lions Gate Bridge is their relative clarity at the Dundarave Pier sited some two kilometres to the west of Ambleside town site. Although not validated during the current research, local resident opinion suggests that the rumble of traffic from the Lions Gate Bridge, and the City of Vancouver itself, is frequently audible as far west as Lighthouse Park some eight kilometres along the bay from the Ambleside town site. This particular acoustic phenomenon relates to the clear transference of sound across water, and is reflected also in the ready transfer of traffic noise across False Creek.

In addition to the traffic sounds that pervade much of the neighbourhood, three additional transportation sounds stand out, albeit with lower frequencies of occurrence: first, the characteristic buzz of seaplanes overhead as they regularly enter and leave the busy Vancouver Harbour, second, the low frequency, high intensity, rumble of freight trains as they move slowly through the community along their waterfront tracks, and third, the blast of ships' horns from large ocean going vessels as they pass through the difficult, and in the past, hazardous, First Narrows (under the Lions Gate Bridge).

As a complement to these transportation sounds that pervade the neighbourhood, a second group of sounds which add to the acoustic character of the village are natural sounds, specifically those associated with the dramatic physical site of the local area. A variety of water-based sounds, for example,
Figure 44

Ambleside: Average Weekday Daytime Sound Levels

[dB(A) and dB(C) levels are depicted in the diagram with contour lines indicating sound level measurements in meters.]
Figure 45

Ambleside: Average Sunday Daytime Sound Levels
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**Location Nine: 1300 Block Clyde Ave**

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**Location Twelve: 1500 Block Esquimalt**

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Table 7

Ambleside Area: Sunday Daytime Sound Levels by Monitoring Location

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stand out as further basic components of local acoustic environments. The constant breaking of waves on the shoreline, the periodic cry of seagulls, and the intermittent engine sounds of small and large pleasure boats from the inlet contribute to the flow and character of waterfront acoustic environments. Inland from the shoreline, the richly textured sound of running water from the small streams that cut down through the neighbourhood via a system of man-made channels and tunnels, adds a further dynamic and vibrant natural dimension to the neighbourhood rhythm, texture and feel, while the low intensity 'friendly' singing of birds forms a common component of the local acoustic environments of both the waterfront and residential sections of the community.

Based on the nature and pattern of local sounds, three broad acoustic regions or zones may be identified across Ambleside: first, the central retail and service area of the neighbourhood that stretches the length of Marine Drive from Nineteenth street in the west to Thirteenth street in the east, and extends to include Bellevue Avenue in the south and the environs of Marine Drive half a block to the north; second, the park and waterfront zone along the shoreline that runs from Ambleside Park in the east to Nineteenth street in the west and includes the small number of remaining residential properties that line the shore, as well as the seawalk south of Argyle Avenue; and third, the major residential sections of the neighbourhood that rise steeply north of Marine Drive and include a combination of high-rises and single-family dwellings juxtaposed along residential streets frequently lined with mature trees and characterized by striking views of the inlet and the City of Vancouver to the south, east and west (Figure 46).
Ambleside: Acoustic Sub-Areas

1. Marine Drive and the Commercial Core
2. Waterfront Streets
3. Residential Streets
5.4.2 Local Acoustic Environments

a) Marine Drive and the Commercial Core

Marine Drive serves as the major transportation artery for both Ambleside and West Vancouver. It forms the major access route for the commercial centres located within Ambleside and Dundarave, as well as the Lions Gate Bridge. The roar from heavy traffic flows along the Drive dominates the commercial sections of the neighbourhood, and further spreads into the surrounding residential areas to the north as well as portions of the recreational, and to a lesser extent, residential areas to the south (Figure 47).

Average daily sound levels along Marine Drive reflect its key transportation role, and are in excess of 65 dB(A) or 77 dB(C) for the majority of daytime hours. The roar from traffic flows at the busiest points on the Drive frequently exceeds 68 dB(A) or 79 dB(C), a product of the heavy flows of local traffic which use the thoroughfare on weekdays from early in the morning (07:30 a.m. onwards) to late in the evening (21:30).

The dominant sounds along Marine Drive, and within its commercial environs, are the revving of car engines and the roar of cars as they speed along the Drive. Average sound levels during the day remain above 65 dB(A) or 77 dB(C), and during the afternoon rush hour periods approach 70 dB(A) or 79 dB (C). On Sundays, daytime sound levels fall by four to six decibels, as the volume and density of local traffic flows subsides.

While the majority of vehicle sounds are generated by cars, the higher intensity roar of the diesel engine Blue Buses of the West Vancouver Transit Authority add their own unique sound to the overall transportation ambience particularly during peak hour periods when their frequent trips along Marine Drive, and up into portions of the residential areas, serve to punctuate the flows
Figure 47
Ambleside: Marine Drive and the Commercial Core Acoustic Environments

1. Post Office Heavy Traffic Flows
2. Construction Projects
3. Transformers
4. Gas Stations

Major Sound Sources

Heavy Traffic Flows
Distant Traffic Rumble

0 - 100 meters

BC Rail

Rail
of vehicle traffic. The relative absence of heavy trucks from the neighbourhood stands in acoustic contrast to the local acoustic environments of both the Commercial Drive, and to a lesser extent False Creek, in which trucks regularly pass through the heart of the community in the former and along the periphery in the latter. En masse, the rhythm and flow of traffic on Marine Drive is controlled by a series of traffic lights located at the major intersections along the drive. In concert, the lights serve to create a pattern of sound level peaks and lulls, as the vehicle flow assumes a wave-like or rhythmic formation.

As a background to the sounds of local traffic flows, the acoustic environment of the eastern portion of the drive, at the foot of Fourteenth Street, also includes the distant rumble of traffic from the Lions Gate Bridge. The lower intensity distant rumble of vehicles from the bridge adds to the domination of the local acoustic environment by traffic and traffic-related sounds.

Despite the commercial orientation of Marine Drive, comparatively few pedestrian sounds penetrate the heavy layer or blanket of vehicle sounds that dominate local acoustic environments. The small number of people-sounds on the Drive reflects its primary vehicle orientation, which results in light pedestrian flows even during peak hour periods, as residents and visitors alike park close to the stores or businesses they plan to visit and negotiate only a brief journey on foot. This relative absence of people-sounds results in an acoustic environment that lacks a significant human dimension, or flavour, and rather is dominated by the low frequency, high intensity repetitive sounds of modern urban transportation. This contrasts with portions of the shopping core in the Commercial Drive area, which despite similar heavy traffic flows retain a human dimension.

The only comparative respite from vehicle sounds along Marine Drive, and within its immediate environs, occurs early Sunday mornings before 08:00
when average sound levels fall to between 55 dB(A) or 58 dB(C) or 66 dB(A) or 70 dB(C). During this period, the isolated sounds of individual vehicles are juxtaposed against a background of low intensity bird sounds, particularly those of crows and seagulls, and the periodic sounds of pedestrians' voices.

Within the commercial environs of Marine Drive, one block south of the major thoroughfare, vehicle sounds are also prominent, although local acoustic environments in these sections of the neighbourhood include a greater variety of sounds that result in more balance. South of Marine Drive on Bellevue Avenue, for example, average daily sound levels are some five to ten decibels lower than those recorded at the busiest points on the Drive, with individual peak level sounds the product of local traffic flows (Figure 48). In addition, away from the traffic dominated environs of Marine Drive, the local acoustic environment includes a greater proportion of people and natural sounds which reflect the close proximity of the recreationally oriented waterfront.

Further west, the neighbourhood post office at the intersection of Bellevue and Seventeenth Street forms another busy site, which similarly reflects the more varied character of local acoustic worlds one block away from the Drive. A steady flow of local traffic pulls up to and away from the parking stalls outside of the single-storey post office building, and results in the common sounds of revving engines and car doors slamming (Figure 49). In addition, however, the voices and footsteps of residents visiting the post office also form frequent components of the local acoustic environment, as many stop outside to chat. The distant sound of children's voices from John Lawson Park located just to the south of Bellevue further filter periodically into the local streetscape, coinciding with lulls in local traffic flows, as do the cheerful clamour of crows and the cries of seagulls from the waterfront.

In addition to the increased presence of people and natural sounds, the local
Figure 48

Marine Drive Looking East from Nineteenth Street

The 1400 and 1500 Blocks on Bellevue Avenue Looking West
Figure 49

Ambleside Post Office on Seventeenth Street Looking Northwest

B C Rail Train at the Fourteenth Street Crossing Looking Northeast
acoustic environment of the commercial streetscape south of Marine Drive also includes the percussive sounds of local construction activity which form an acoustic reminder of the ongoing development and revitalization of the old village centre. Local traffic on Bellevue, while much lighter than that on Marine Drive, includes a small number of building supplies vehicles which deliver equipment and some materials to the various work locations. The distinctive pulsating reversing horn, or siren, of delivery vehicles stands out as an isolated local sound event. One final construction sound that periodically dominates the local streetscape is that of the oppressive sound of portable generators. The generators, when in use, increase local sound levels significantly, with average sound levels measured across the street from the work site in the region of 71 dB(A) or 83 dB(C) during midday to early afternoon periods.

Additional transportation sounds that form common elements of the local acoustic environment include those of seaplanes and helicopters, trains and ships from the inlet. The most frequent of the four is the drone of seaplanes whose frequent trips into and out of the Vancouver Harbour located to the east form a periodic component of the transportation-based acoustic ambience of Marine Drive and the commercial core. As well as seaplanes, the clatter of helicopters from the inlet also forms a periodic component of the local acoustic environment, with the 'noisy' percussive sounds from their overhead movements standing out against the lower intensity ambient sounds.

Although considerably less frequent than those of seaplanes, the slow, high intensity rumble of the train that builds up to a cacophony as it moves along its shoreline track to the south of Marine Drive, and adjacent to the commercial core, stands out as the loudest local sound event. Sound levels on the sidewalks adjacent to store facades facing the tracks on Bellevue reach levels of up to 86 dB(A) or 100 dB(C) as the train passes slowly by. The daily passage of the train
along the periphery of the commercial core provides an acoustic juxtaposition of two of the important transportation modes (car and train) that have both, in their different eras, helped shape the form and function of the community. The train, however, has no developmental impact now in West Vancouver or Ambleside, and merely passes through as though a corridor (Figure 49). As a final transportation component of the local acoustic environment, the distant and haunting sound of ship horns from vessels in the inlet, is audible throughout the commercial core. The horns or whistles form distinctive, albeit intermittent components of the local acoustic environment, that stand out as testimony to Ambleside's, and the region's, historic and contemporary maritime links and livelihood.

b) The Waterfront

South of Marine Drive, in the predominantly recreational environs of the waterfront, the variety and balance of the local acoustic environments changes considerably from that of the commercial core. A greater variety of individual sound events characterize the waterfront region of the community, and reflect the natural and people-oriented character of the local setting (Figure 50).

The most noticeable difference between the adjacent acoustic environments of the waterfront and commercial core is the reduction in the density and volume of traffic sounds, and the associated decrease in measured sound levels. Average daytime sound levels, along the waterfront pathways and in John Lawson Park at the foot of Seventeenth Street, for example, are some ten decibels lower than those in the core areas and range from 54 to 58 dB(A) or 70 to 72 dB(C). Despite the reduction in sound levels, related to the relative absence of foreground traffic flows, the continued presence of low frequency sounds is reflected in high ‘C’ scale sound level measurements which are some 10 to 15
Ambleside: Waterfront Acoustic Environments

Figure 50

Waterfront Features
- A. The Old Ferry Terminal Building
- B. John Lawson Park
- C. The Seawalk

Major Sound Sources
1. Pedestrians and Joggers
2. Children's Playground
3. Ambleside Park Sportsfields

BC Rail

0 100 meters
decibels higher than their ‘A’ scale equivalents. These high C scale readings reflect distant traffic flows from the Lions Gate Bridge to the east, and from the west side of Vancouver across English Bay to the south, as well as local traffic flows from Bellevue Avenue and Marine Drive to the north.

The waterfront itself consists of a series of acoustic sub-areas or environments which, while they share some common acoustic characteristics, are marked by their own unique features. Thus, the rhythm and texture of the acoustic environments within the three areas of the Old Ferry Terminal at the bottom of Fourteenth Street, John Lawson Park, and the seawalk between eighteenth and nineteenth streets reflect the unique physical orientation and activity profiles that characterize each of these distinct settings.

i) The Old Ferry Terminal

The acoustic environment of the old ferry terminal building, at the foot of Fourteenth street, reflects the juxtaposition of commercial and recreational land uses that surround it. The traffic roar from both Marine Drive and Bellevue Avenue forms a near constant element of the acoustic environment given both the openness of the major intersection of Fourteenth Street and Marine Drive to the north, and the flow of local traffic on Bellevue Avenue (Figure 51). Average daytime sound levels close to the old ferry terminal range from 54 to 60 dB(A) or 69 to 70 dB(C) on weekdays, and from between 49 to 56 dB(A) or 63 to 68 dB(C) on Sundays. In addition to traffic sounds from Marine Drive and Bellevue, the rumble of distant traffic flows from the Lions Gate Bridge forms a pervasive acoustic background against which other local sounds unfold.

While vehicle sounds thus form a basic element of the local acoustic environment, a combination of people and natural sounds also adds to the acoustic character of the setting. People-sounds include the voices of pedestrians
Figure 51

The Old Ferry Building at the Foot of Fourteenth Street Looking South

The Fourteenth Street and Bellevue Intersection Looking North
out for a walk, the pounding footsteps of joggers, and the raised voices of children at play on the beach and pier. The flow and rhythm of people follows a pattern which sees the mid-morning period characterized by female joggers, many of whom run in groups, the lunch hour dominated by the voices of children, the early afternoon marked by the more sedate pace of pedestrians, and the early and late evenings shared between joggers and locals out for an evening stroll. On Sunday mornings, the hustle and bustle of shouts and whistles from the variety of sportsfields located in Ambleside Park one and a half blocks to the east add additional interest. Lower ambient sound levels mean that the voices and shouts are more clearly heard.

Natural sounds form a further element of the local acoustic world. The animated squawking of crows, the more distant cry of seagulls and the gentle rhythm of waves on the shoreline all form common local sounds. A less frequently heard natural sound is that of barking dogs.

The common waterfront sounds of seaplanes overhead, the daily rumble of the trains, the booming sound of ships' horns from the inlet, and the distinctive clatter of traffic helicopters also sound out. The loudest sounds on the waterfront are those of the train which reach levels of up to 95 dB(A) or 104 dB(C) at the park bench adjacent to the pier. Overall, the acoustic environment in and around the old ferry terminal building is one of contrasts with the low frequency, high intensity repetitive roar of local traffic flows comingled with the varied frequencies and timbres of natural and people sounds.

ii) John Lawson Park

Immediately to the west, within the green and leafy confines of John Lawson Park, at the foot of Seventeenth Street, the traffic sounds of Marine Drive are replaced by natural and people sounds that unfold against a
background ambience of middle distance, low intensity traffic sounds from the Lions Gate Bridge to the east, as well as Marine Drive one block to the north. By way of contrast, the occasional roar from vehicles on Bellevue Avenue serves as a reminder of the urban setting in which the park is set.

On both weekdays and weekends, the acoustic environment changes quickly to reflect the different activities that take place in the park. From nine in the morning until after dark on both weekdays and at weekends, the park is used by different groups who generate their own distinctive acoustic environments, albeit against the ambience of natural sounds. During the mid-morning and early afternoon periods, for example, groups of mothers with young pre-school age children congregate in the western portion of the park by the playground area and number up to 60 in total during the busiest periods. The sounds of children at play are variously joined by the concerned or authoritative voices of parents who visit and chat close by. By late afternoon and early evening, the major park activity changes with mothers and their young pre-school age children being replaced by pedestrians and joggers, the latter pounding along, frequently encased within their own self-designed and self-regulated "walkman" soundscapes. On Sundays, the park becomes a busy place for different groups all at the same time.

The natural sounds of the park serve as a constant reminder of its site and situation. Waves breaking on the shoreline, and the richly textured rushing of wind in the mature trees that define the park's boundaries shape its natural ambience, which is reinforced by the more discrete calls of crows, seagulls and other smaller songbirds which frequent the park. As within the remainder of the waterfront, vehicle, seaplane, train and ship sounds are all periodically heard.

Daytime sound levels vary from between 53 and 58 dB(A) or 65 to 74 dB(C) on weekdays, and between 49 to 55 dB(A) or 59 to 68 dB(C) on Sunday. In
keeping with the rest of the waterfront area, the loudest individual sounds are those of the train, which reaches levels of up to 84 dB(A) or 97 dB(C) as recorded at a distance of approximately 30-40 metres. The afternoon passage of the train, signalled by its clanging bell and the roar of its engine, generates considerable excitement and among the children at play, many of whom run to watch it pass by. Although less intense than the train, the more frequent sound of the seaplanes that pass overhead reach sound levels of up to 70 dB(A) or 81 dB(C) and regularly disturb the relative tranquillity of the park.

The exposed waterfront setting means onshore breezes which not only influence the breaking of small waves on the shore, but also cause the mature trees to sway in the breeze. The result is a textured swirling acoustic environment that serves in part to mask some of the vehicle sounds from the commercial core to the north. The acoustic of the park retains a natural character, albeit against a low frequency traffic rumble from across the bay.

iii) The Seawall Between Eighteenth and Nineteenth Street

The most noticeable acoustic feature along the seawall is again the absence of traffic so common across all three study areas. The only traffic sounds on the seawall are those from Lions Gate Bridge which form a low intensity, low frequency hum that fluctuates with the direction and strength of onshore breezes.

Natural sounds dominate the acoustic environment and include the rhythmic breaking of small waves on the beach below, as well as against the seawall itself at high tide, the rushing of breezes and winds blowing in from the bay, and the more isolated sounds of bird cries primarily those of seagulls and to a lesser extent crows. The voices of pedestrians and pounding footsteps of joggers form discrete sounds that come and go. Indeed, they fade quickly fade as
the residents or visitors pass by. A small number of cyclists also use the seawall, against the regulations prohibiting their presence or passage, with the resulting whir of bicycle wheels a less common element of the local acoustic environment.

Again, the three distinctive transportation sounds of seaplanes overhead, boat horns from the inlet, and the slow rumble of the train add a transportation flavour to the margins of the community, just as they do to its commercial core. Of the three only those of the seaplanes with their busy nature and frequent schedule take on an intrusive or invasive quality. By contrast, the slow rumble of the train which builds up as the engine approaches, and the infrequent blast of ships' horns retain a dramatic and stirring quality that match the drama of the coastline itself, with its coastline configurations, and changing qualities of light.

Average daytime sound levels along the seawall reflect the dramatic nature of the site, and range from 53 to 57 dB(A) or 65 to 73 dB(C). The exposed nature of the seawall results in frequent sea breezes and the shifting action of the tides both of which add acoustic interest and diversity. Daytime sound levels on Sundays are some 3 to 4 decibels lower than their weekday equivalents, and range from between 49 to 53 dB(A) or 60 to 64 dB(C). The quietest period along the seawall is late Sunday evening after nine o'clock when the daytime breeze has dropped, the tide has retreated, and ambient community sound levels have fallen. During the stillness of this late evening period, however, a distant hum of traffic from Vancouver across the bay settles along the seawall. Sounds from the False Creek area, the harbour, Vancouver's west side and the Lions Gate Bridge, all combine and sit like a fog over the waterfront.

c) The Residential Streets

The residential streets of lower Ambleside to the north of Marine Drive are
characterized by a blend of local and more distant sounds that reflect the residential character of individual streets, as well as their connection to both the Ambleside commercial core immediately to the south, and the City of Vancouver across the bay. The texture and flow of residential acoustic environments are influenced by the character of both local and more distant traffic flows. In broad terms, two fundamental elements include the near constant, low intensity rumble or hum of distant traffic flows, which form a background for the higher intensity, but less frequent, roar of local traffic flows. Along individual streets, average daily sound levels show a gradual decrease as the distance from Marine Drive increases, although this trend is complicated by the role of several streets as north-south arterial or collector roads, for example Fifteenth and Seventeenth Streets. Average daytime sound levels on these busy local streets, as well as along the sections of the other residential streets that surround them, are higher, with the overall pattern one of lower sound levels on the east-west oriented avenues, than on the north-south oriented streets. This basic difference in the local acoustic character of individual roads is one product of the varied functions they serve (Figures 52 and 53).

Average daily sound levels on the major north-south streets exceed 58 dB (A) or 71 dB(C) during day time hours with the highest sound levels recorded on street sections immediately north of Marine Drive, and the lowest in those sections physically removed or sheltered from it, for example, on Nineteenth Street. By contrast, average day time sound levels on the east-west avenues generally lie between 52 to 55 dB(A) or 63 to 67 dB(C), although these increase by some four to five decibels on the residential sections of Clyde Avenue one block north of Marine Drive.

Throughout the residential sections of the community, the highest daily sound levels coincide with the periods of heaviest traffic flow during the early
Figure 53

The 1700 and 1600 Blocks on Duchess Street Looking East

Fifteenth Street Looking North from Marine Drive
morning and late afternoon rush hour periods. The steep slope of the majority of north-south streets results in some vehicles straining as they negotiate the lower sections of their steady climb, resulting in elevated local sound levels. Local traffic flows are heaviest on Fourteenth, Fifteenth and Seventeenth Streets with Sixteenth, Eighteenth and Nineteenth Streets quieter by comparison. On Seventeenth Street, the sound of local vehicles is compounded by the high intensity roar from the diesel engines of the West Vancouver Blue Buses, which travel up to the upper levels residential areas. The sound of individual buses on Seventeenth Street reaches levels of up to 78 dB(A) or 81 dB(C) as they negotiate the steady rise north.

As a contrast to the low frequency and commonly high intensity traffic sounds that form a basic element of most local acoustic environments, natural and people sounds add to the character of local streets. Throughout the residential areas of the community, the low intensity pervasive sounds of wind in the mature trees that line many individual streets, and the fluctuating chirping of small birds form pervasive acoustic elements. In addition, the constant babbling and gushing of the three local creeks, MacDonald adjacent to Memorial Park, Lawson Creek by the Canadian Legion Building, and Vinson Creek next to the fire hall, add a further natural character to the spaces adjacent to them.

Less pervasive natural sounds, which form discrete sound events, include the overhead cry of seagulls and the ground level or roof level clamour of crows. The intensity and density of bird sounds is greatest on the western and eastern fringes of the study area particularly along the 1800 blocks on Duchess and Esquimalt and the 1300 block on Esquimalt. The single-family nature of all three of these blocks supports the continued presence of mature trees, open yards, bushes and hedgerows suitable for cover and shelter. The mature chestnut
trees along Seventeenth Street provide a similar haven. Additional natural sounds that contribute to the acoustic character of individual streets, include the intermittent sounds of dogs barking, again on the western periphery of the study area, and the chatter of squirrels adjacent to the municipal hall.

The number of people-sounds on most streets is limited, although there is a daily movement of pedestrians to the commercial core located along Marine Drive to the south. Benches sited on several north-south streets (for example, Seventeenth Street) offer sites for impromptu meetings and conversations. The intermittent, low intensity sounds of voices are very localized elements of local acoustic worlds, however, especially given the more pervasive and high intensity roar of local traffic flows. People-sounds are most common in the vicinity of Hollyburn Elementary School, where children's voices spill over onto the surrounding residential streets of Esquimalt and Duchess during recess periods as well as before and after the school day. On early Sunday mornings, the cries and shouts of young soccer players from the playing fields in Ambleside Park are clearly audible along the eastern periphery of the study area, just as they are along the waterfront. The limited presence of people-sounds on many local streets relates in large part to the number of high rise dwellings that crowd into the heart of the community. Such buildings present their residents with only limited opportunities for street level interactions with either neighbours or friends.

Construction sounds form a more localized components of the daily acoustic worlds of individual streets. A variety of construction sounds rings out, especially along the lower sections of Thirteenth and Fourteenth streets in the eastern portion of the village, and the lower sections of Seventeenth street. The periodic reverberation of these sounds throughout the day provides a sonic reminder of the ongoing regeneration of sections of the built environment, some
of which are being upgraded and some of which demolished and replaced. The more dramatic and higher intensity sounds of the latter sound out as acoustic testimony to physical change in the local area.

As final discrete components of local acoustic environments, the frequent overhead buzz of seaplanes, the much less frequent passage of jet aircraft, the daily low throb of the train, the distant blast of ships' horns, and the afternoon daily clatter of helicopters from over the Inlet, all add to the character of local acoustic environments. The sounds of the seaplanes, jet aircraft, train and ships' horns sound out across all of the varied residential environments. Those of the helicopters, on the other hand, focus on the eastern margins of the neighbourhood. Of these different transportation sounds it is the buzz or drone of the seaplanes that is the most common, and which continues from early in the morning to late in the evening. The rumble of jet aircraft, while much less frequent than that of the drone of the seaplanes, is magnified by its echo from the northshore mountains above the village. Ambleside's distance from major international flight paths keeps these noises few in nature. The daily movements of the train form a distant throb that resounds throughout the area, although it does not reach the intensity of the jet aircraft. The distant blast of ships' horns stand out as an enduring testimony to the maritime links of the northshore and the City of Vancouver, and a stirring and evocative local sound event.
Chapter Six: Residents' Soundscapes

6.1 Introduction

A summary of the acoustic environments encountered within each of the three study areas was presented in Chapter Five. The acoustic portraits for each neighbourhood were based on objective data in the form of sound levels and sound source descriptions gathered through the use of a spatial and temporal monitoring framework, supplemented with the findings from local soundwalks. This chapter 'people' the analysis through an exploration of the sounds local residents hear as they go about their daily lives, that is their acoustic impressions of the neighbourhood or their soundscapes.

The soundscape represents the interface between the objective acoustic reality, which may be physically measured or recorded, and the impression or perception of that reality as experienced by the local residents or listeners who live within it. Thus, while the acoustic environment may be categorized as the specific aggregate of the sound levels and sound events found within a given context, it may also be considered in more humanistic terms on the basis of the sounds that local residents hear, their summaries of the varied textures and rhythms of these sounds and the meanings, feelings and experiences that they associate with them. Given its human dimension, the soundscape must be explored through the description and interpretation of local residents' acoustic experiences. The major findings from resident interviews are thus presented and described in this chapter. Subsequently, in Chapter Seven, they are further interpreted and explored, in conjunction with the findings from Chapter Five, from the perspective of person-place relationships.

This chapter describes the individual acoustic experiences of local residents, identifies the range of sounds they hear in their neighbourhoods, and
records their responses, feelings and reactions to these sounds. The key to this exploration is the focus on sound not as a stimulus that evokes a given response, but rather as information which may or may not be listened to, and which is interpreted and understood differently by individual listeners. Through a process of 'thick description' the acoustic experiences of individual residents are sorted and some sense made of the overall structure, content and meaning of residents' daily acoustic worlds.

6.2 Resident Interviews

Detailed interviews with local residents in each of the three study areas provide the basis for the exploration of local soundscapes: twenty-six in Commercial Drive, twenty-six in False Creek and twenty-eight in Ambleside. As outlined in Chapter Three, residents were identified for interview through a random walk technique which was used to 'select' two interviewees from each of the sampling hexagons defined as part of the spatial framework for the objective measurement of sound levels and the description of sound events. The majority of residents were interviewed within their own homes, the house types including all the common forms of apartment, condominium, single-family dwelling or basement suite. The exceptions were five interviews conducted outdoors, four in backyards and one on the balcony of a high rise apartment block.

The interactive nature of the interviews enabled a large amount of contextual information to be collected and residents' specific quotes or key phrases to be captured. Notes taken during the interviews were transcribed immediately afterwards to prevent the loss of the 'small items' or nuances generally overlooked in traditional social survey methods of data collection. Information thus collected was used to construct an interview transcript, or text, which was complemented by a supporting set of notes on the context or nature
of the interview itself. For example, an attempt was made to document not only the content of the discussion, but also the nature of interviewee responses to specific questions, and the strength of opinions, attitudes or views expressed.

Based on the various forms of data gathered during resident interviews, the character and structure of local resident soundscapes for each of the three study areas may be summarized as follows. To provide a context for the exploration of residents' acoustic experiences, a brief review of their general feelings toward their neighbourhood and their daily lives was included as the first part of the interview. This is similarly presented here prior to the more detailed discussion of the sounds residents hear and their impressions or interpretations of them.

6.3 Commercial Drive

6.3.1 Resident Profiles

Fourteen women and twelve men were interviewed in the Commercial Drive area (Table 8). Ranging in age from nineteen through to seventy-five, they have lived in the area from as little as eight months to as long as forty-five years. Interviewees included a small cohort of university and BCIT students (five in total), three retirees, four homemakers and mothers with young children and thirteen residents who work full-time or part-time outside of the home in careers that range from law to sewer maintenance. One resident was unemployed at the time of the interview, or more precisely on compensation due to an industrial injury received within the last year while at work for one of the railway companies.

Sixteen of the twenty-six residents live in rented accommodation, commonly one or more floors of older three-storey houses. Nine residents own their homes, the majority of which are single-family dwellings rather than
### Table 8

**Commercial Drive: Characteristics of Residents Interviewed**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Count</th>
<th>Length of Residence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>12</td>
<td>Less than one year 5</td>
</tr>
<tr>
<td>Women</td>
<td>14</td>
<td>One to three years 8</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>Three to five years 4</td>
</tr>
<tr>
<td>18-24</td>
<td>5</td>
<td>Five to ten years 4</td>
</tr>
<tr>
<td>25-34</td>
<td>6</td>
<td>Over ten years 5</td>
</tr>
<tr>
<td>35-44</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>45-54</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>55-64</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>65 and over</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Housing Tenure</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renter</td>
<td>16</td>
</tr>
<tr>
<td>Owner</td>
<td>9</td>
</tr>
<tr>
<td>Cooperative</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Occupation/Major Activity</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional/Management</td>
<td>3</td>
</tr>
<tr>
<td>Service/Retail</td>
<td>6</td>
</tr>
<tr>
<td>Trades/Technical</td>
<td>4</td>
</tr>
<tr>
<td>Unemployed</td>
<td>1</td>
</tr>
<tr>
<td>Homemaker</td>
<td>4</td>
</tr>
<tr>
<td>Student</td>
<td>5</td>
</tr>
<tr>
<td>Retired</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Living Arrangement</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live alone</td>
<td>6</td>
</tr>
<tr>
<td>Share accommodation</td>
<td>20</td>
</tr>
</tbody>
</table>
condominium or townhouse units, and one interviewee lives in a housing cooperative. In terms of their living arrangements, twenty interviewees share their accommodation with one or more family members or friends, while only six live alone.

6.3.2 Residents' Feelings Toward the Commercial Drive Area

Residents' feelings toward the Commercial Drive area vary. Despite individual differences, however, the majority of residents feel some measure of positive sentiment toward the area, and were prepared to talk at some length about their experiences and daily lives there. A small number exercised some caution in discussing their fears, insecurities or disappointments about their daily lives in the Commercial Drive area. They expressed this through non-committal or resigned responses such as, "it's too bad really", "there's nothing you can do about it", "no use complaining", "it's the same everywhere", or "it could be worse". Through the interview process some exploration of the deeper sentiments that underlay these responses was feasible and provided the basis for a greater understanding of the specific processes at work. This brief exploration of residents' feelings toward the Commercial Drive area and their daily lives there provided a useful context for the subsequent exploration of their acoustic experiences, and the discussion of the various factors that combined to help shape and mould them.

The specific factors that influenced residents' decisions to live in Commercial Drive varied, ranging from the practical and functional through to the more aesthetic or idiosyncratic. In broad terms, three general sets of factors influenced resident moves to the area: environmental, social and functional or instrumental. The environmental factors interviewees identified include the "lively character" and vitality of the community, its "ethnic" and "cultural"
flavour, as well as its close proximity to the downtown core. The social factors include the presence of family or friends in the neighbourhood, which was important to several residents, allied with the general "neighbourliness" or friendliness of the community as a whole. The functional or instrumental factors include the availability of relatively affordable housing or accommodation, the unique appearance and character of much of the older housing stock, the diverse range of local stores, cafes and restaurants, as well as the frequent bus service and the sky train connection to the downtown area.

Residents' initial attraction to the area was commonly a result of two or more of the above factors, although frequently one specific outcome, characteristic or feature provided the final pull which prompted them to move there. All five students, for example, cited the affordability of local accommodations as the key factor for them, one of relative significance given their fixed or low incomes.

But the factors most commonly cited included some aspect of the neighbourhood's functional and environmental characteristics, particularly its reputation as a "friendly" or "neighbourly" community, its "vibrant character" and "ethnic or cultural feel", as well as the availability of relatively inexpensive accommodation. For individual residents, the cultural diversity of the community was reflected physically in the eclectic mix of local, independent stores, cafes and restaurants, while its "character" or "feel" was grounded in the Drive's growing reputation as a centre for "counter culture" to rival previous centres in the more fashionable, and increasingly more expensive, neighbourhoods of Kitsilano and the West End.

In contrast to the factors identified by most interviewees as important, the initial appeal of the community for long-time residents was somewhat different. These residents viewed the Drive as something of an emergent community when
they originally moved there, a good place both to "put down roots" and to "raise a family". In addition, the Drive had the further advantage of being close to two of the major early employers in the city, the port and the railyards. For three long-time residents, however, their considerable length of residence in the community, over 25 years for three of them, means that the specific factors that influenced their individual decisions to relocate there relate to past situations and contexts, especially proximity to employment.

Residents' subsequent discussion of 'what makes a place a good place to live for them' included some of the same factors. The students, for example, consider 'a good place to live' somewhere "reasonably priced", with good access to the university or college, easy proximity to stores, restaurants and cafes, and a place with some "atmosphere or character". By subtle contrast, a good place to live for the working adult and homemakers interviewed is somewhere with "realistically priced" or "affordable housing", a safe and stable environment, "good access to schools" and stores nearby. In addition, approximately half the working adults and homemakers further feel that the community should have a "friendly" or "neighbourly" quality. For retired residents, the demands of a "good place to live" are less restrictive and include the presence of family and friends nearby, reliable local stores and services (for example physicians) and a safe, secure environment ("low crime rate - with few break-ins").

While resident views of what makes a place a good place to live differ, so too do their general impressions of Commercial Drive. Across interviews residents described the local area as a "character neighbourhood", "ethnic", "friendly", "busy", "run-down" and a "changing community". Inevitably, residents' responses reflect their own involvement in or commitment to the community, and differ depending on their housing, social and economic status. While generalizations across interviewees are necessarily tentative, student and
young single working adults' views of the neighbourhood differ from those of residents with young families or retirees. The latter group, for example, view the area in more pragmatic terms and consider it "friendly", "busy" or "changing", while the former emphasize its "ethnic", "culturally dynamic" or "vibrant" qualities. This simple division reflects the different social contexts of the two groups, as well as their varied involvement in local activities and pastimes; for example, the local cafe scene.

Resident descriptions of what they both like and dislike about the neighbourhood further reflect the differences in their lifestyles and routines. In terms of "likes", the "character" and "community spirit" of the neighbourhood are important features for both young and old, long-time and short-term residents alike, although their individual definitions of this differ. Thus, for the students and young working adults, the positive character or spirit of the community is reflected in its cultural diversity, and counter-culture orientation, the physical expression of which includes the range of local cafes, restaurants and to a lesser extent clubs. Residents with families and retirees, however, see the character or spirit of the community expressed in its "friendliness" or "neighbourliness" which remains embodied in the presence of local friends or "good neighbours". In addition to the area's community spirit, residents with families and retirees also value the convenience of the area's local stores and businesses, while those with children appreciate the presence of local parks and schools.

Residents similarly have positive feelings toward the neighbourhood given its role as a partial haven from the more "hectic tempo" or, in the words of one resident "materialistic focus", of much of the City of Vancouver. Indeed, young and old residents alike consider Commercial Drive "a place where you can truly be yourself", although the individual expression of this "self" differs from
person to person.

In contrast to the major 'likes', residents' 'dislikes' are two-fold: first, the heavy traffic flows that dominate the Drive, and further characterize, to varying degrees, the residential streets that branch off it; and second, the recent increase in local violence and crime, particularly that considered to be gang-related. Both 'problems' are concerns for many residents, although problems relating to local crime and violence are particularly worrying for many of the women interviewed. Some women talked specifically about fears for their own personal safety (or that of their children), as well as associated problems of home break-ins or thefts from parked cars. The problems of crimes against property, and the "recent increase" in break-and-enter offences, similarly trouble working adults and seniors alike, although concerns for their personal safety are apparently less of an issue. Residents who own their homes view the recent reported rise in break-ins as particularly disturbing, a reaction obviously related to their own 'stake' in the area as property owners.

As an extension of resident likes and dislikes about life in the Commercial Drive area, the majority of interviewees are satisfied with the area as a place to live. A small number did report some decline in their overall level of satisfaction, a product of changes in the community itself - specifically, the perceived rise in local crime and violence. Based on the comments of individual residents throughout the whole interview, their level of satisfaction with the neighbourhood as a place to live relates as much to their satisfaction with their own economic or social position, that is their 'place in society' - as it does to their specific geographic circumstances, that is their 'place in the world'. Both residents, for example, who described how they had been "forced" to relocate to the community as a result of some recent downturn in their personal fortune (disability and the loss of a job on the one hand, and divorce and the disposal of
the family home on the other), offered critical comments on the neighbourhood.

Overall, long-time residents and homemakers are most satisfied with Commercial Drive as a place to live, while the interviewees who moved there more recently, or after some negative change in their personal situation or fortune the least. Those most satisfied are also the most 'localized' in their activities, for example their use of local stores, cafes, restaurants and parks, and also commonly have a financial stake in the community in terms of homeownership. Conversely, those least satisfied are less likely to be involved in local community activities or to visit and use local businesses and amenities. The degree of local involvement is clearly related to satisfaction with the area as a 'place to be'.

Homeowners and retirees have a strong sense of belonging to, or feeling at home in, the neighbourhood. By contrast, the five students, those residents who moved to the area within the last two years, and those who are dissatisfied with the area as a place to live, feel no more sense of belonging to the Commercial Drive area than to any other. Students, as well as the young single interviewees, and even a couple of residents with young families, find the concept of 'belonging' to, or feeling a sense of really being at home in the Commercial Drive area, an inappropriate or premature one. For these residents, the major attraction lies in its environmental characteristics and functional amenities (affordable housing and the range of local coffee shops), rather than in some connection with their sense of self identity and belonging. Thus, the local physical environment functions more as an activity context, or set of contexts, which offers opportunities for particular interactions or access to particular resources, rather than a place to which they really belong.

By contrast, the commitment to place of long-time residents, retirees and a number of the homeowners is much greater, with Commercial Drive considered
'home', a place they 'feel at home' and to which they have a sense of belonging. For these residents, the local neighbourhood forms the centre of their social and familial networks, as well as being a key component of many of their past experiences. The specific experiences of two residents, Marie and Joe, reflect residents' sense of belonging. Marie, now in her late forties, was born and raised in the local area, and now lives only a few blocks from her parents' family home. Marie has spent the majority of her life in the area, and her daily life and routine are inextricably linked to the Drive: "I grew up here . . . This is our home . . . I know it's changing, . . . it's changed a lot. But it's still home."

Joe has similarly lived in the community for the majority of his adult life, having moved there with his wife over forty years ago. For Joe, like Marie, The Commercial Drive area is home and an integral component of his memories, experiences and current daily routines: "This is where our family live . . . I have garden and shops nearby . . . We never live no place else for over forty years . . . Where we want to go at our age?"

6.3.3 Residents' Soundscapes

a) The Nature of Residents' Soundscapes

Just as resident's experiences of, involvements in, and attachments to the Commercial Drive area vary so do their acoustic experiences of the neighbourhood. In broad terms, residents' acoustic experiences or impressions of the local area range from the shallow, vague and neutral through the practical, functional and formal to the deep, rich and emotionally vibrant (Table 9). Residents whose overall sense of place, or attachment to place, is weakly defined or even apathetic, for example, commonly have a similarly limited interest in or understanding of their acoustic dimensions of local daily life. For
### Table 9

**Commercial Drive: Nature of Residents' Soundscapes**

<table>
<thead>
<tr>
<th>General Soundscape Characteristics</th>
<th>Specific Soundscape Features</th>
<th>Dominant Sense of Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Weakly Defined</td>
<td>Few sounds noticed; little detail heard.</td>
<td>Pragmatic view that you have got to live somewhere; little involvement in local activities.</td>
</tr>
<tr>
<td></td>
<td>Disinterest in local sounds</td>
<td></td>
</tr>
<tr>
<td>2. Functional, focus on noise</td>
<td>Concentration on traffic noise; critical comments on noise; sounds part of daily life</td>
<td>Emerging sense of place; some involvement in local activities; financial stake in the community (home ownership)</td>
</tr>
<tr>
<td>3. Vibrant, detailed</td>
<td>Awareness of many different sounds provide information on local events; emotive responses to specific sounds; sound memories.</td>
<td>Strong sense of place; long-time residents; feeling of belonging of being at home; concern about local changes.</td>
</tr>
</tbody>
</table>
some residents, the acoustic rhythms and tempos of everyday life are little more
than an incidental context through which they move without reflective thought.
The acoustic awareness of these residents is limited, and their interaction with
the geographic world all around them matter of fact or non-committal. As a
group, these residents expressed little overt regard for, or made specific mention
of the omnipresent acoustic dimension. References to community sounds were
vague, and responses to individual questions indecisive; "it's okay", "not sure",
"couldn't really say" or simple "yes" or "no" answers which were not
subsequently expanded. Perhaps, it is less a matter of blotting out the sonic
dimensions of their environments than a matter of not opening up to them.
Sound in daily life is understood as purposeful or specific, or else it is noise.
Thus, speech or music are actively listened to but ambient noise is not.

The group of residents indifferent to or largely unaware of local sounds
include Wayne, whose responses to interview questions suggest a general
ambivalence to the local area and the sounds that he hears there. Wayne lives
just off the northern portion of the Drive in the main floor suite of an older
house which he rents with a friend. In his early thirties, Wayne works as a cab
driver. He considers his main floor suite to be "okay" if "a bit pricey", and
"better than some places" where he has lived. Wayne considers Commercial
Drive "all right", although some of the "new crowd" who have recently moved
there are "strange" and "artsy types". Wayne's responses to questions on the
different sounds that he hears were vague and expressed with disinterest. Most
questions were greeted with simple "yes" or "no" answers which, when
clarification was sought, were expanded marginally, to include ambiguous
comments such as "not much", "all right" or "not sure". In his answers to almost
all the questions, Wayne communicated a general lack of interest that extended
to both the discussion of his feelings toward the Commercial Drive area, as well
as the sounds he hears as he goes about his daily life. The only sounds Wayne paid specific attention to seemed to be those of his stereo system which stood proudly displayed in the suite living room. The stereo was clearly audible from outside the house, but was turned off for the duration of the interview.

A second, and much larger group of interviewees, have a much greater awareness of, and interest in, local sounds. Their descriptions of sounds were diverse, albeit with a decided focus on those sounds considered negatively such as "traffic noise". In fact, traffic noise was emphasized repeatedly. For this second group of residents, local sounds, and noises form a normal, if sometimes unwelcome, component of daily life and routine, a by-product of urban existence. Indeed, many of these residents have strong opinions about just what the community "should sound like", and which sounds are appropriate and inappropriate. Local neighbourhood sounds are thus considered part of the local context which contributes to the character of the local area, but not necessarily as significant or vibrant elements in their own right. For Marie, a part-time cosmetologist, married with a young child, who lives off the southern portion of the drive in an older two storey home she bought with her husband in the early 1980s, local traffic "noise" is an annoyance. The screeching of tires and the roar from "local speedsters" as they "tear past" her home particularly annoy her. Similarly, "late evening noise" from the Vancouver East Cinema is a source of irritation which does not belong on a "residential street like this". While local sounds thus form a part of Marie's daily world, she places considerable emphasis on the noises which disturb or bother her, rather than additional sounds that add to the flavour or character of her street.

For a final group of interviewees, their local daily lives are accompanied by a vibrant acoustic dimension that not only provides an omnipresent context for daily interactions and routines, but also defines spatial and temporal patterns and
flows of interaction. Sounds provide information about the local world, and are used to order time and routine. In addition, individual sounds or patterns of sound are further imbued with a symbolic value or emotional significance that extends beyond either the physical qualities or characteristics of the sound itself to include past experiences, intentions and aspirations. The local soundscapes of these residents are rich in detail and meaning.

Betty, for example, a recent retiree, considers the sounds she hears an important dimension of her local world. A homeowner, who lives off the southern section of the Drive in an older two storey house, Betty grew up in the interior of the province and moved to the Commercial Drive area in the late 1950s. An avid "nature lover" and keen "outdoors person", Betty spends "as much of her spare time as possible" at work in her garden in which the varied sounds of birds, the wind in the trees and barking dogs all form "friendly visitors". Betty, who never learned to drive, and was widowed three years ago, knows all her neighbours well, and has seen the local area "change for the worse" over the years with the "noise" from increased local traffic flows a growing problem. Betty's home and local street form the basis of her daily life, the place where she focusses her energies and spends the vast majority of her time.

While the preceding "groupings" represent the broad categories to which individual residents may be assigned, based on the nature of their community sound experiences, a portion of residents, not surprisingly, straddled the boundaries or edges of specific groupings. The specific groupings may best be considered as "ideal types" or abbreviations of reality that capture some of the differences of residents' acoustic experiences, but cannot explain them for all the many sounds they hear. Thus, the following summarizes residents' impressions of and responses to the different sounds they hear.
b) Residents' Experiences of Specific Types of Sound

i) Traffic sounds

Traffic sounds form one of the major sounds residents hear on a regular basis. All residents, regardless of the depth or intensity of their individual acoustic experiences, their length of residence in the community, the location of their homes, or their ages or social positions consider traffic sounds (or more frequently in their words "traffic noise") as basic to their local acoustic worlds. Residents most often hear traffic sounds from cars, with buses a close second, and motorcycles and trucks a more distant third and fourth. The specific sounds residents associate with these different vehicles vary, with the most common being engine roar, tire squeal, the blast of horns, and the pounding beat of car stereos (locally called "boomer cars" these are also problematical in places such as Ambleside Park - and more particularly Robson Street - and are a phenomenon of good weather from about late April to early September).

The six residents who live directly on the Drive, or whose suites or houses are immediately adjacent to it, place considerable emphasis on the almost constant sound of traffic during the daytime hours. When they are at home, near constant vehicle sounds characterize their individual acoustic worlds. They consider these sounds "noise", although they largely accept them, albeit with a sense of resignation.

The traffic noise here is really bad . . . we're right by the road and get it all.

The traffic on Commercial is very loud . . . I close the window to shut it out and turn up the stereo.

On Commercial it's a real problem . . . Traffic makes the whole place so hectic . . . I don't drive and resent it.
For these residents the whole neighbourhood, or more precisely the whole of their local lifespaces, is "crowded" with traffic sounds - traffic over which they have little control or influence.

In contrast, residents who live on the side streets that branch off the Drive, commonly draw a comparison between traffic sounds heard on the Drive and its immediate environs, and those that they associate with their own local street. In broad terms, while they associate the Drive with "almost constant traffic" or "heavy traffic", they consider these sounds "far enough away", "background" or "distant". By contrast, the specific sounds of individual vehicles on their local streets, although much less pervasive, commonly form a "nuisance" or "annoyance" given their immediate presence.

As a further result of their more immediate or local presence, some residents relate these individual traffic sounds to particular vehicles or events, associations that contrast with the general anonymity of traffic sounds on the Drive itself for all residents. Thus, for Dianne the sounds of local youths "stunt-driving" past her ground floor co-op suite is a common Friday and Saturday evening event which she has reported to the police on several occasions. At least twice within the last year, the 'stunt driver' has further "clipped or banged into parked vehicles" in his flight - sounds which have awoken Dianne from her sleep and prompted a call to the police.

Most residents are aware of general variations in the volume and density of traffic sounds, although their descriptions of these on a daily, weekly, monthly or seasonal basis are brief. Only two of the six interviewees who live either on or close to the Drive, for example, notice overall changes in the volume of traffic sounds from the Drive, which they relate to heavier traffic flows during the afternoon and evening peak hour periods. Side street residents do not generally notice daily or weekly variations or patterns in the volume of local
traffic sounds, although some particular daytime fluctuations are discernible. The two interviewees who live adjacent to the Vancouver East Cinema, for example, associate early and late evenings with a relative increase in local traffic sounds, as well as the slamming of car doors, from street and curbside parking locations which accompany the start and finish of films.

Minor daytime variations aside, the bulk of traffic sounds that residents hear on a regular basis are anonymous and considered "the same". This anonymity is most pronounced for residents who live either on or directly adjacent to the Drive itself, with the continued cacophony of traffic sounds variously described as a "wall of sound" or "a constant roar". Except for broad distinctions between cars, buses, trucks and motorcycles, residents are unable to identify or describe clearly the sound of individual or known vehicles. They further do not specifically listen for individual vehicles. Even the four residents who rely on the bus as their main means of transportation, rely on the frequent schedule, "there's one every few minutes" rather than listening out for them. Peter, who lives on the corner of Fifth Avenue and Commercial, expresses sentiments similar to the other five residents whose homes lie on or adjacent to the Drive in the description of his own "desensitization" to the constant flow of traffic: "I find that I all but block it out... it's like it's always there... but I just shut it out."

In comparison, residents on the generally less busy and quieter side streets, do distinguish, in varying degrees, between the more limited number of traffic sounds they hear. Eight side street residents referred to the particular sounds of individual vehicles they hear on a regular basis in and around their local street and whose distinctive sound has become well-known to them. These include sounds of the local garbage truck as it makes its weekly rounds up and down the back lanes, as well as the particular sounds of neighbours', family or friends'
vehicles, which arrive and leave at particular times. Dorothy, a homemaker and mother, relies on the distinctive roar of the approaching truck as a signal to take out her garbage if she had not already done so. Jean, a newly arrived resident who has lived off the northern section of the Drive for less than a year, associates the sound of her next door neighbour's car being "revved up" with the arrival of "another potential buyer" to view it. Finally, Betty, a long-time local resident who lives adjacent to the southern section of the Drive, periodically hears the guttural rumble of motorcycles at the end of her street a sound she associates with the arrival of a small group of bikers at the corner store, about whom she harbours suspicions.

A common characteristic of the residents who reported these particular acoustic experiences is either their presence at home for a significant portion of the day or the concentration of their daily routines in the local area. This extended exposure to local sounds is further reflected in the local acoustic experience of Karen. Karen, a homemaker and mother, listens out twice a week for the arrival of her neighbour's car - "a good friend" who drives her to a fitness class at the local community centre. Given that she has to get her own two children "settled" before she leaves, it's the familiar sound of her neighbour's car pulling up outside that tells her "it's time to leave".

Throughout the Commercial Drive area, traffic sounds are thus a basic component of resident soundscapes. Although frequently loud, and certainly pervasive, most residents notice little pattern or detail in these continuous sounds or noises. Rather, they largely accept them, in a resigned manner, as part of city living. Side street residents, especially those who live east of the Drive and in the southern half of the neighbourhood, are more aware of sound details in the intermittent flows of local traffic sounds. In addition, the general acceptance of their pervasive presence is less resigned. Two residents, for
example, have complained to the City of Vancouver about late-night traffic noises on their local streets, but received little response. Overall, traffic sounds form a large but generally unwanted element of resident soundscapes:

I don't like it . . . but what can you do? . . . I complained to the City last year but got nowhere.

It's my pet peeve . . . It's frustrating late at night when it's quiet out . . . I guess it's the same everywhere now.

When I first moved here the noise bothered me . . . now I don't let it bother me . . . It's a fact of life.

ii) Non-vehicle transportation sounds

In addition to the traffic sounds that are basic to resident soundscapes, the additional transportation sounds from trains, the skytrain, aircraft and ships from the inlet, also form part of their local acoustic worlds. Unlike the pervasive presence of traffic sounds in almost all residents' soundscapes, however, these sounds form more limited or discrete elements. Overall, residents express a much greater interest in, and affection toward these sounds than they do traffic "noise", with seventeen hearing trains on a regular basis; sixteen seaplanes; twelve the Skytrain; twelve jet aircraft overhead; and six residents ships' horns from the Burrard Inlet.

In contrast to the more ubiquitous traffic sounds, the sounds from these alternate transportation systems cover, with the exception of those from jet aircraft, a much smaller area of the neighbourhood. As a reflection of this, both the geographic orientation of the specific sound source, as well as residents' place of residence, activity patterns and listening habits influence their identification of them as part of their local soundscapes. For residents who live on the southern and western margins of the study area, for example, the
distinctive sounds of the train, allied with those of the skytrain, assume a much greater role in their local soundscapes, as compared to residents who live in the northern or eastern margins of the community. Conversely, the blast of ships' horns from the harbour area and the Burrard Inlet form distinctive elements of the local soundscapes of residents in the northern section of the neighbourhood, while they are largely absent from the soundscapes of those who live south of First Avenue. Similarly, the drone of seaplanes heading toward and away from the harbour are more likely to form common elements of resident soundscapes in the northern section of the Drive, than those in the south. By contrast, the rumble of jet aircraft overhead, on their way to or from the Vancouver International Airport, figures in resident soundscapes across the neighbourhood, a reflection of its more ubiquitous and diffuse presence.

Within these general acoustic relationships, shaped by the proximity of place of residence to the origin of specific sound sources, the acoustic experiences of individual residents differ. Such differences within the general patterns appear to be a product both of unique activity patterns in and around the community, exposing residents to a number of different sounds, as well as their individual listening habits. Thus, despite the similar exposure of residents to the same sounds, both their awareness of them or reactions to them differ. Stan, a long-time resident of Charles Street in the northern section of the study area, for example, regularly hears the drone of seaplanes from the inlet, while Elizabeth also a resident of Charles Street, although for less than a year, does not.

Of the non-vehicle transportation sounds residents hear, it is the rich and varied sounds from trains' and ships' horns or whistles which capture their attention and interest the most. The haunting and distant call of train horns, allied with the low throbbing rumble of diesel engines, clearly stand out. Residents whose homes lie on the southern and western fringes of the
neighbourhood regularly hear the blast of train horns, as well as the low rumble from the diesel engines, as the trains wind their way slowly but surely through the Grandview Cut. By comparison, residents whose homes lie in the northwestern portions of the community, hear the middle distance call of train horns which carry from rail lines to the west of the neighbourhood.

Residents who live on the southern and western fringes of the study area not only recall the specific details of train sounds, including their idiosyncracies, but also associate them with particular periods of the day. John, at home on compensation, considers train sounds essentially a "morning thing", and occasionally annoying when he's trying to sleep in: "My apartment faces the tracks and yards and they are busy... Every morning, first thing, it's busy... surprisingly so". Joan, a home maker, also associates the rumble of trains with the morning hours, although she also hears them again in the evening, when she notices the horns rather than the rumble of engines. During the summer months, Joan finds both "early morning" and "late evening" train sounds "more noticeable", given that she commonly leaves the back windows in her house open.

Overall, residents 'enjoy' the varied sounds of the train as they pass through the neighbourhood, although two residents associate these daily train movements with "pollution and poor air quality". Residents generally consider the more distinctive and less frequent train sounds as positive elements of their local environments - and not primarily as "noise". Indeed, train sounds have a mnemonic or symbolic quality for several residents that raises them above the routine and matter-of-factness of everyday life. Michael, a recent arrival in the Vancouver area from Ontario, finds that the train horns remind him of his home and youth, growing up in a small town closely tied to the railway: "The deep heavy sound reminds me of home back east... As kids we'd spend long hours..."
watching, listening and smelling the trains roll by."

In contrast to the generally warm resident feelings and sentiments toward train sounds, those of the Skytrain are considered much more mundane, and similar in some ways to traffic sounds. The "frequent schedule" of the Skytrain allied with its late running hours until "well after midnight" both on weekdays and weekends bothers residents who live close to the elevated track. Acoustically, residents refer to it as "just another noise", although they consider it "not as bad as I'd thought when they first announced it", and "no worse than all the traffic we get nowadays". Two residents, both of whom live on the side streets off the Drive, regard the absence of Skytrain sounds from their local soundscapes as relief, "No! We can't hear that here... I believe they hear it south of here, but we don't". In part, this response relates to the 'bad press' that preceded the construction of the line, and for a time after when the tracks were ground by B.C. Transit to reduce vibrations.

A smaller number of residents hear the distant blast of ships' horns or whistles from the Burrard Inlet to the north. As with train sounds, these distant whistles remind individual residents of past times and places. William, a long time resident of the Commercial Drive area and former dock worker, among other things, is frequently reminded of "his days on the docks", when he hears the whistles, although he considers the "modern air horns" to have "little of the character of the old whistles".

The varied sounds of trains, the Skytrain and aircraft form part of the local soundscapes of almost all the residents who live on the side streets off the main Drive. Drive residents, by contrast, do not hear these sounds on a regular basis. The ever-present roar of heavy traffic flows dominates their local acoustic worlds, and results in the virtual exclusion of other sounds, including those from other transportation modes.
iii) People-sounds

Residents hear a variety of people-sounds that form an important part of their local soundscapes. The particular people-sounds residents hear differ, as do the meanings that they attach to them. By contrast to the 'hum drum' and anonymous quality of traffic sounds, the more diverse sounds of people going about their daily lives, regularly 'grab the attention' of residents, and form important indicators of local events and activities. Residents commonly differentiate between the people-sounds that form part of their immediate local world - that is the environs of their residence or the street or block on which they live - and those which form part of the wider or more distant community.

The differences between resident perceptions of people and traffic sounds relates both to the considerable human sensitivity toward people-sounds in general, as well as significant differences in their respective acoustic profiles. Listeners remain most sensitive to the sounds of the human voice and human soundmaking (Truax, 1984). From birth we retain a consistent interest in both the endless variety of verbal formations, as well as the wide "range of non-verbal elements that complement them" (Truax, 1984, p. 28). The human brain remains sensitive both to the distinctive profile of individual voices, as well as the many levels of expression. In addition to differences in the human perception of people and traffic sounds, the limited volume or intensity of people-sounds further results in the production of individual sounds which, besides being rich in meaning and significance, are more specifically tied to particular times or locations as compared to the more intensive and pervasive presence of vehicle sounds.

The people-sounds residents hear most often include shouts or people talking (twenty-four residents), children at play (sixteen residents), people singing and the various melodies of street musicians (fifteen residents), and
teenagers out "carousing" in the evening (six residents). Specific people-sounds serve as important sources of information about neighbourhood activities, as well as specific warning or attention-raising devices. At a broader level, residents further link these sounds to the character of the neighbourhood itself, as well as the varied sub-areas within it.

As sources of information about community activities, residents commonly use people-sounds to structure the unfolding of specific events or situations. Marie, who lives close by the Vancouver East Cinema, for example, associates the sound of voices in the early and late evening with the end of the shows: "When the evening shows end there's a definite hub-bub of voices and activity . . . Frequently, laughter and shouts also." Similarly, Dianne, who lives by Victoria Park, regularly hears shouts and calls in the weekday afternoons that tell her the regular bocce games are in progress. The sound of voices in the evening from the same area, however, disturbs Dianne, given the use of the park after dark by "youths" and "drunks". As a complement to their role as sources of information, the shouts and calls of passers-by also serve as warning signals about potential problems, a distinction which residents draw based on the nature of the sounds themselves, as well as their context:

When I hear shouts from outside I alert myself . . . If my kids are outside I go and investigate.

Just recently, we've had problems with fights below where we live . . . The other Saturday night a man was beating up a woman . . . It sounded horrible.

At a broader level, the emotive and human qualities of people-sounds further contribute to the ambience of the neighbourhood both at particular times and in particular places. Thus, for individual residents specific patterns of people-sounds
are synonymous with particular sections of the neighbourhood, as well as their essential rhythms, character and tempo.

On the Drive there's nearly always a lot of voices and shouts . . . part of the community is its street life.

Friday evenings have a real buzz about them . . . there's always a lot of people hangin' out.

According to residents, a hub-bub of sound and activity characterizes specific locations in the neighbourhood which form further 'people places'. Examples of these include the main retailing core on the Drive, the neighbourhood parks, particularly Grandview and McSpadden, as well as the environs of the local schools. The particular sounds residents associate with these individual places include those of "tennis matches" and "schoolyard cries" from the park and school areas, as well as a "mix of different languages" on the Drive.

Overall, people-sounds form important components of residents' local soundscapes. They stir the interest of many residents and capture their attention, while providing them with information on local events and interactions. Residents who live off the Drive use people sounds as information about local activities and events, be it the start and finish of shows at the Vancouver East Cinema, or the playing of bocce in the local park. In comparison, those who live on, or close to, the Drive consider people-sounds part of the community's permanent streetscape, with an increased tempo and flow on weekends.

iv) Local business sounds

Twenty-four residents identified local business sounds as a further
component of their local soundscapes. Despite the large number of residents who referred to such sounds, however, they generally described them in less detail, and with greater brevity, than either the people or traffic related sounds that form the basis of their local acoustic worlds. Residents closely associate business sounds with the retailing and commercial areas of the Drive both spatially and functionally. Business sounds do not generally form a major part of the soundscapes of residents who live off the main Drive, and if they do are considered in negative or critical terms.

The business sounds residents hear most often are those of music from the wide variety of restaurants, cafes and independent stores that make up the commercial core of the Drive. Seventeen residents hear these sounds daily in the neighbourhood. In addition to music from the numerous loudspeakers mounted outside restaurants and stores on the Drive itself, however, residents also associate business sounds with four other sources: local construction activity identified by five residents; the Vancouver East Cinema, three residents; store deliveries, two residents; and the light industrial businesses in the southern section of the Drive, two residents.

Despite their variety, business sounds form only minor elements of residents' soundscapes. The majority of residents who live off the main Drive, for example, consider restaurant and business sounds physically and acoustically removed from the centre of their daily lives - especially in comparison to the more dominant traffic sounds and more-attention getting people-sounds. David, who has lived in the area for five years, and whose home lies to the west of the Drive, close to the Grandview Bowling Lanes, exemplifies this general lack of awareness: "The restaurants and bars play music . . . But I can't place them . . . it all gets confused". For Joe, also a long time resident of the area, the music from the Drive, similarly forms something of a 'terra incognita': "All sorts of
places have music blaring out. . . . I never really listen to it when I'm out . . . I wouldn't know one from the other".

For most side street residents, music from restaurants, cafes and businesses on the Drive thus form an ambient component of the retailing sections of the community, a sound to which they do not pay specific attention. The physical distance of their homes from the Drive, combined with their often limited role in the local restaurant or cafe scene, means that much of its distinctive music and rhythms are separate from the acoustic spaces of their daily worlds.

By contrast, the same music forms an important part of the local soundscapes of six residents, who can distinguish between the music and rhythms of individual businesses. These residents, three students, and three others who live in the northern portion of the Drive, spend either a large portion of their leisure time on the Drive itself, or live close to specific businesses that include music as part of their ambience. As a result of this greater exposure to, or involvement in the local restaurant and cafe scene, these residents are more aware of the music individual businesses play, as well as some of the factors behind its choice:

The different bars have different regulars and the music matches . . . You pick your place and pick your scene.

The new wave or counter-culture hang-outs are characterized by the music as much as the crowd.

For this small group of residents, the music from individual cafes or bars reinforces the 'culture' or atmosphere of the place itself, and indeed defines the social space. Entrance into these specific acoustic worlds, however, is strictly the preserve of the locals or 'crowd'. Casual listeners remain oblivious to the
differences which are lost within the high ambient sound levels on the Drive.

In addition to music, residents also refer to a further group of business sounds. Unlike restaurant and cafe sounds, however, the acoustic profiles of these secondary business sounds extend beyond the Drive itself, into sections of the residential streetscapes adjacent to the commercial and business sections of the Drive.

Construction sounds, for example, form part of the local soundscapes of four residents who live on the residential side streets off the main Drive. Three of these residents associate these sounds with a specific property or project in the neighbourhood. Further, two know the property owners who are having the work completed, and have some understanding of the nature of the work being done.

Resident comments on construction sounds relate, at least in part, to the nature of the project itself. Two residents who live east of the Drive, for example, and hear the evening and weekend hammering and banging from two local home renovation projects on their own street, consider the sounds "part of every day life in an older community" and "a sign of improvement". In contrast, the two residents whose homes are west of the Drive, and one of whom does not know where the sounds come from, consider construction sounds a nuisance. John, for example, describes the sounds as "annoying and stressful" and further relates them to the general state of physical decay that characterizes his street, and which he views as "pretty bad". The construction sounds which "annoy" John are from a condominium development which has replaced "two or three older homes which had been torn down". John views these changes as detrimental and damaging - views that influence his subsequent impressions of the sounds he hears.

Three other residents identify sounds from the Vancouver East Cinema as
regular elements of their local soundscapes. All three residents live close to the cinema on side streets off the Drive. They all hear the sound of cinema patrons arriving for and leaving after the evening shows, while two also hear the further constant hum from the air-conditioning unit on top of the cinema. Ellen finds the "hum" from the air-conditioning unit "irritating and a pain". It occasionally keeps her awake in the evening.

Two residents in the northern section of the Drive hear the regular sounds of delivery vehicles, while two in the southern section report the hammering and grinding from local auto repair shops. Three major factors influence their responses to these sounds: the proximity of the sound source to their homes, the intensity and frequency of occurrence of the sounds, and the variance of the sounds from the regular residential ambience. Early morning deliveries to the Paris Bakery, for example, are a "noisy intrusion" for Dorothy who lives just to the rear of the store. Similarly, the "banging and drilling" from "late night shifts" at the auto repair shop "frustrate" and "disturb" Gary, who lives across the alley from the shop, especially when he works shifts.

iv) Natural sounds

Alongside the variety of mechanical and people-sounds that largely dominate resident soundscapes a few natural sounds also form part of residents' acoustic worlds. Residents hear three types of natural sounds: those of birds, the varied sounds of the weather, particularly wind and rain, and the sound of barking dogs.

The most common natural sounds residents hear are those of birds, the wind and to a lesser extent rain. Residents consider these sounds part of the local context or ambience, and in many cases they do not play a more active or dynamic role in residents' local soundscapes. In contrast, the sound of dogs
barking, which fewer residents hear, provides them with information about the changing nature of their local worlds. Five residents, for example, not only notice spatial and temporal variations in the sound of dogs barking - referred to by one long-time resident as the "canine chorus" - but also attribute "the chorus" to specific events. Four residents associate the barking with the periodic movement of "down and outs" or "grubbies" up and down the back alleys in search of bottles and cans from residential garbage; three relate it to the evening jaunts of gangs of youths or teenagers, and two the weekly collection of the garbage.

Four of the five residents who associate dogs barking with local events live in the southern portion of the neighbourhood to the east of the Drive. Residents describe this section of the neighbourhood as the one populated by the greatest concentration of dogs - with one long-time resident suggesting that as many as five new dogs have been added in the one block radius of her home within the last year. Two residents relate this recent increase in the number of dogs to the rise in local break-ins. The resident who does not associates the sound of dogs with specific local events lives in the north-western portion of the community by Grandview Park.

Acoustically, the distinctive and attention-getting sound of barking dogs contrasts with what residents consider the ambient sound of birds and birdsong. The "quieter" or "softer" "singing or chirping" of birds is something that "is always there". Residents from the southeastern portion of the community who notice barking dogs also hear birdsong the most. They relate this near constant presence of bird sounds to the large number of mature trees that line the streets in this part of the neighbourhood, and act as a "haven" for a variety of different birds. The birds are most noticeable in the early morning, especially before the "start of traffic".
Three residents, all of whom live to the east of the Drive, distinguish between two or three of the different species found in the community. Betty, for example, who lives on Sixth Avenue, just east of the Drive, considers herself an "authority" on the habits of the birds which "visit" her back yard. Indeed, she has recently noticed a considerable decrease in the number of local pigeons - a discovery she has shared with her friends and neighbours. The comments of Betty aside, however, most residents simply consider bird sounds to be always there, and, as a result, they do not specifically "notice (them). . . most of the time" except on those isolated occasions when their "minds wander" or they "stop to smell the roses".

Across the neighbourhood, the relative concentration of bird sounds in the soundscapes of residents who live on the side streets off the Drive, contrasts with their general absence from the soundscapes of residents who live on or close to it. Drive residents only infrequently hear birds singing, which one resident attributes to "traffic noise" and "busy nature" of the Drive. Jessica, the one Drive resident who includes bird sounds as part of her local soundscape, hears them in the early evening during her walks along the residential streets to the east of the Drive, when the "constant zoom of traffic" is replaced by "a quieter, slower paced atmosphere".

In addition to the natural sounds of birds and dogs barking, residents also hear the sounds of different and changing weather systems. The most common weather sounds include those of the wind (in the trees) which twenty-three residents report, and the sound of rain on roofs, sidewalks and in gutters which twenty hear. Ten residents associate increases in the strength and direction of local winds with the possibility of rain. Muriel, a long-time resident, uses the sound of distant thunder from both the west and north as one indicator of the approach of storms, a skill she "learned as a child" some fifty years previously.
Lastly, three residents report hearing cats fighting. All three of these residents live away from the Drive, on one of the residential streets in the north-eastern portion of the study area.

Natural sounds thus form a common element of residents' soundscapes, especially for those who live away from the busy environs of the Drive. While the softer and more pervasive sounds of birds singing form ambient components of local streetscapes, the more punctiform sounds of barking dogs assume a more active role. For the most part, residents consider the presence of natural sounds, particularly birdsong, as positive features of the neighbourhood, although the sounds of late night cat fights are not well received. Many residents value the presence of natural sounds. Indeed the residents who live to the east of the Drive regard the numerous bird sounds they hear as indicative of the residential character of their local streets, sounds that distinguish these streets from the busy and hectic commercial areas of the Drive.

v) Local sound signals

As a complement to the individual sound events and ambiences residents hear, a small number of specific sound signals also punctuate the routine flow of their soundscapes. Thirteen residents hear the sound of church bells, eighteen emergency sirens, five foghorns, and one the fire alarm from the corner post office building. Residents' impressions of these sounds vary, as do the meanings and significance they attach to them. Long-time residents, who spend large portions of their day in the local area, or who live on the side-streets off the Drive, are most aware of these sound signals, and further attach meaning to them as part of their daily lives and routines. Conversely, residents who live close to the Drive or who spend the bulk of their day outside of the local area are only vaguely aware of them.
Twelve of the thirteen residents who hear the church bells live on the residential streets off the main Drive. Those residents whose homes lie close to the two local churches that ring their bells hear them the most often, although two residents who live in the northwestern portion of the community also hear them on a regular basis. All but one of the residents who hear the bells know which church they come from - with the one exception, a recent arrival to the neighbourhood who has had little time "to explore" her new community.

Residents associate the bells most commonly with either "Saturday weddings" or "Sunday morning services". Two residents in the northern half of the Drive hear the bells from St. Francis of Assisi Church during weekdays, when they mark the start of daily masses, as well as the noon hour.

Symbolically, the bells provide an acoustic reminder of their Christian faith for three residents who are regular church-goers. Even for non church-goers, however, the characteristic peal of the bells has a reassuring and bonding quality, one that epitomizes the continuity of everyday community life:

It (the sound of the church bells) gives me a small community feeling . . . It's sort of wholesome to think of people going to church.

The bells are super . . . It's like a link to the past when things were smaller and quieter.

By contrast to the generally warm resident response to church bells, their perceptions of the electronic, and more intrusive sounds of emergency vehicle sirens, are more critical. Residents accept the piercing sound of sirens with resignation. This gives way on occasion to both frustration and anger which echo the frequency of occurrence of sirens, as well as their intensity:

We hear a lot of sirens around here . . . we're on an emergency route for ambulances and fire engines.
I hear them so often that I now know when it's an ambulance, fire engine or police car just by the sound.

I know they have their purpose . . . but it's disturbing. I often worry that it's someone that I know who is in trouble.

Long-time residents relate the "large number" of sirens they hear to the placement of two emergency vehicle stations (ambulance and fire) on the eastern boundary of the neighbourhood, locations which they consider as inappropriate for reasons related to the 'not-in-my backyard' syndrome.

As with the church bells, residents who live on the side streets off the main drive hear sirens most often, particularly those who live closest to the two emergency vehicle stations. Unlike the sound of the church bells, however, residents hear the blare of emergency vehicle sirens throughout the whole neighbourhood. They consider them both abrasive and intrusive, and indicative of local incidents or problems. As a result of the sirens' intensity, abruptness and association with "emergencies" of some description, residents consider them as "invading" their local acoustic space, and one more local sound over which they have little control.

In contrast to the larger number of residents who hear church bells and emergency vehicle sirens, a much smaller number, five in total, hear foghorns from the inlet and English Bay areas. These residents all live in the northern half of the study area, on the side streets off the Drive. The distinctive "mournful cry" of the foghorn forms a "haunting" and "mysterious" sound, an "infrequent" or "occasional" component of resident soundscapes. Three of the five residents associate the horns with either the fall period or "fog season", or late afternoon or evening hours. Indeed, foghorns retain a "timeless" quality that make it difficult for residents to recall the last time they heard them. In this way they
further assume a transitional role between the overtly signal role of warning sounds and the contextual drone of more common sound events.

The ability of residents to place the sound of the foghorns in either time or space is limited. Four of the five residents who hear them, for example, are uncertain as to the location of the horns, and refer to them in general terms: "on the north shore somewhere", "in the inlet" and "by the bay". The one long-time resident, able to identify the location of specific horns, and refer to them by name, is a retired port employee. Further, he discerns some order to the horns based on the "time of day" and "local weather".

As one final local sound signal, one resident, who lives to the east of the Drive on Sixth Avenue, periodically hears the building alarm from the post office. Over the past two years the alarm has "gone off" frequently, especially on weekends or in the evenings with "little or no response" from the police or senior staff. Indeed, the alarm once "rang for up to two hours . . . and nobody did a thing". Although no other residents indicated that they hear the alarm sound, for Betty the alarm has come to signal the fact "that no one really cares these days . . . alarms go off and we all ignore them".

c) Residents' Synopsis of Local Area Sounds

The sounds residents consider most representative of their local soundscapes include an assortment of the varied traffic, transportation, people, natural and business sounds they hear on a regular basis both on the Drive and within its residential environs. The specific sounds which characterize the local neighbourhood differ somewhat from the individual sound events that they hear most often. For residents who live off the Drive, the sounds that they most associate with the neighbourhood include the "sound of pedestrians", "neighbours' voices" and "birds", while those that they "hear more often" are
those of traffic, followed by natural sounds and then people sounds.

Residents who live on the Drive, or within its immediate environs, associate the neighbourhood most with people-sounds - particularly the vibrant array of street sounds on the Drive, and local business sounds - specifically those of music from the local restaurants and businesses within the commercial core. By contrast, the sounds they hear most often are those from the heavy traffic flows on the Drive.

In their summary of local sounds most residents emphasized, to a greater or lesser extent, what they consider positive acoustic elements, that is the sounds that they considered most dynamic, inviting and satisfying. For individual residents the acoustic flavour of the neighbourhood is best summed up by, among other sounds, those of "people laughing and shouting", "children playing in the park and on the street", "birds singing in the trees", and that of "music on the Drive". For the small group of residents, however, who live either on the Drive itself, or on residential streets they consider "noisy", the community is associated with the "roar of traffic" or "car noise".

Residents consider the most distinctive local area sounds to include "rap music on car stereos", "the sound of drums from the park", "the man who plays saxophone in the park after midnight", the "dawn chorus" of songbirds, the sound of "cats fighting" and the "mix of different languages" on the Drive.

While residents differ in their descriptions of the most distinctive local sounds, they generally agree that neighbourhood sound levels have either "stayed the same" or risen ("become noisier") since they moved there. Those residents who consider neighbourhood sound levels to have stayed about the same include the majority of residents who have either moved recently to the community, and have lived there for less than two or three years, or who live on the Drive or close to it.
Long-time residents who live off the Drive, consider the neighbourhood to have become "noisier", mainly due to "increased traffic flows", the introduction of the skytrain, an increase in local construction activity and an "increase of new residents particularly students and young people in the area". Most consider the changes in the local soundscape considerable, with increases in local traffic flows the major culprit.

As a corollary of increased local sound levels, residents are aware of a number of sounds that have disappeared from the local area. 'Lost sounds' include those of children playing, the throaty warble of pigeons, the peal of church bells, and the rumble of trains. While residents consider the loss of children playing, and pigeons comparatively recent - within the 'last two to three years' - the tolling of church bells and the sound of trains are more distant memories, belonging to a different era rather than to an earlier decade.

d) Sound Recordings

Individual responses to the tape recordings varied (Table 10). Of the four sounds played for them, twenty-four residents correctly identified the sound of the Skytrain, ten the sounds of children playing in Grandview Park, eight the sound of the street musicians and four that of the Navare (chicken) Restaurant.

Residents who spend at least some time in the vicinity of the recording site, or who regularly pass by it, were the most likely to identify the nature of the individual sounds, as well the location of the recording itself. The one exception was the sound of the Skytrain which all but two residents correctly identified. The high level of resident awareness of the sound of the Skytrain may be related both to the intensity and distinctive profile of the sound itself, as well as to widely reported controversies over its noise during the early months of its operation.
### Table 10

**Commercial Drive: Residents Correctly Identifying Sound Recordings**

<table>
<thead>
<tr>
<th>Sound Recording</th>
<th>Number of Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skytrain</td>
<td>24</td>
</tr>
<tr>
<td>Children in Grandview Park</td>
<td>10</td>
</tr>
<tr>
<td>Street Musicians</td>
<td>8</td>
</tr>
<tr>
<td>Navare Chicken Restaurant</td>
<td>4</td>
</tr>
<tr>
<td>Residential Street Recording</td>
<td>9</td>
</tr>
<tr>
<td>Local Park Sounds</td>
<td>12</td>
</tr>
</tbody>
</table>
The residents who correctly identified the sounds of the park also used children's voices to aid in its identification. Residents associated these voices both with the park itself, as well as with the Britannia School immediately to the north. The eight residents who correctly identified the sound of the street musician, and further associated him with the liquor store on Commercial Drive, all reported that they pass by the store on a regular (daily or weekly) basis. One of the eight residents further knew the musician by name ("Dwayne"), and described him as a "regular fixture on the Drive" for about two years. In addition to "Dwayne", this resident also knew the three other musicians/"street buskers" who shared the liquor store spot with Dwayne in a daily rotation.

Three of the four residents who correctly identified the blaring music from the Navare Restaurant (also referred to as "the chicken place"), regularly pass the storefront, with one eating there on a frequent basis. In addition, eight other residents suspected the music to be from one of the many different restaurants on the Drive; these interviewees recognized the sound as a type, and associated it with local restaurants in general, rather than with one specific place.

Residents' ability to separate the recordings of residential street and park environments made in their home community from those made in the other two study areas again differed. Twelve residents correctly identified the sounds of Grandview Park from those of the other two parks, while eight selected incorrectly and four reported that they were unable to distinguish between them. The twelve who correctly identified the park relied on the children's voices, clearly audible on the tape, as well as heavy traffic flows on the Drive, including the passage of local buses.

Residents found it difficult to choose between the sound recordings made on a local residential street, on Sixth Avenue half-a-block east of Commercial Drive, and those made outside of the neighbourhood. Nine residents chose
correctly, although four admitted that they merely guessed and could not be sure in their choice. Eight residents did not know which recording was from their local area, while nine selected incorrectly. The five residents confident in their choice used as a guide the background roar of traffic and the sound of birds singing. Thus, to these sound-sensitive residents, it was the larger complex of sounds, and hence the greater level of information to which they were attuned, that provided the basis for identifying the correct locations of recordings.

6.4 False Creek

6.4.1 Resident Profiles

The twenty-six False Creek residents interviewed include thirteen men, and thirteen women (Table 1). They range in age from twenty-three to seventy, and have lived in the area from just under one year to over ten years. Four are retirees, six homemakers and mothers with young children, while sixteen work either full-time or part-time outside of the home in occupations which range from dental hygienist to physician.

Seven interviewees rent their homes, seventeen own them, and two live in co-op housing. They live either in condominium units or townhouses, with an emphasis on the former. The variation between individual units is considerable, however, with the market value of the more prestigious low-rise units in excess of $350,000, while the rent of other subsidized lower income units varies from $500 to $600 per month. Eighteen residents share their residence with one or more family members or friends, while eight live alone.

6.4.2 Residents' Feelings Towards the False Creek Area

As with the residents in Commercial Drive, False Creek residents hold a
Table 11

<table>
<thead>
<tr>
<th>Gender</th>
<th>Men</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women</td>
<td>13</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Age</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>18-24</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>25-34</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>35-44</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>45-54</td>
<td>6</td>
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<td>55-64</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>65 and over</td>
<td>4</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Occupation/Major Activity</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional/Management</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Service/Retail</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Trades/Technical</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Volunteer</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Homemaker</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Retired</td>
<td>4</td>
<td></td>
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<table>
<thead>
<tr>
<th>Length of Residence</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than one year</td>
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</tr>
<tr>
<td>One to three years</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Three to five years</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Five to ten years</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Over ten years</td>
<td>2</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Housing Tenure</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Renter</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Owner</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Cooperative</td>
<td>2</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Living Arrangement</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Live alone</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Share accommodation</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>
variety of views and opinions on False Creek as a place to live, and the nature of their daily lives there. For most the experience of living in False Creek is a positive one, although one resident, in the process of moving when interviewed, was critical of life in the community. Three of the residents have made internal moves in the False Creek area itself, the result of changes in their own personal situation or in response to local problems or difficulties. As a result of their experiences in different parts of the community, these residents have insights into the nature of daily life and routine within different phases of the development. In addition, one further resident, a homemaker and mother, moved to False Creek from the Commercial Drive area two years earlier, after she and her husband graduated from university. Her daily life in False Creek contrasts sharply with her former residential experiences on the Drive.

The specific factors which influenced the move of individual residents to the area fall under the same three broad headings identified for resident moves to the Commercial Drive area: environmental, social and functional or instrumental. Environmental factors were those most consistently cited by individual residents. Thus, the high amenity value of False Creek reflected in its "picturesque site", "scenic views" a "country feeling", "quiet neighbourhood", and "pleasant and attractively designed streets" were important for almost three-quarters of the residents, despite the fact that there is a high level of ambient sound in the area. The location of the neighbourhood on the southern edge of the downtown core, as well as its close proximity to a series of recreational amenities also formed important attractions for half of the residents interviewed.

Residents also identified the functional characteristics of the area as influential in their decision to move there. The availability of subsidized accommodation, the waterfront parks, local schools, and the large number of
walkways were further desirable features. A much smaller number of residents also identified the social characteristics of the community as important in their decision to relocate. Thus, two residents referred to the presence of family in the local area or nearby as important, while for two others the engineered social mix was an attraction.

The decision of individual residents to move to the area was commonly based on a combination of the above 'pull' factors allied with complementary 'push' factors that prompted them to move from their former residence. For sub-groups of residents, however, the influence of specific factors differed, a product both of their individual personal needs and the resources available to them. Thus, occupants of subsidized accommodation, for example, clearly cited the availability of this type of housing as the key influence which determined their relocation to the area. By comparison, the environmental and social characteristics of the site, as well as its variety of recreational and amenity features, were of secondary importance. As James, one of the residents in subsidized accommodation, explained: "It's a great place to live . . . But I could never have got in without the Association."

The majority of owner-occupiers in the private market components of the development, on the other hand, considered the physical availability of affordable housing units unimportant, and focussed instead on the locational attributes and amenities of the site. Thus, for high-income residents who live in attractive market condominiums, the amenities and environmental characteristics of the site formed the significant factors which influenced their decision to move there.

Given the relative newness of the community, especially when compared to other more well-established neighbourhoods across Vancouver, including Commercial Drive, the factors which influenced residents' decisions to move
there remained relatively stable over time - although individual residents have changed their own views of them. Tom, for example, who moved to the area some ten years earlier because he liked "the social ideals that were present", has revised his views of the engineered social mix as a result of "excessive neighbourhood noise", "rude neighbours", and "litter-filled sidewalks". Similarly, the three residents who have made moves within the community all found that their initial residential experiences fell short of pre-residence expectations, the result of "too much noise", "crowded accommodations", and a "lack of privacy". Despite these negative experiences, however, all three chose to stay in the Creek rather than move to a new area.

Residents' summaries of what makes a place a "good place to live" drew on many of the same factors that influenced their initial decision to move to False Creek. Thus, for the majority of residents a good place to live includes an "accessible location", "close to major amenities and work", a "picturesque and well maintained site", a "friendly neighbourhood", a "quiet environment", a "safe environment with low crime levels", a "clean environment", and "a community with schools and stores nearby".

Residents' descriptions of a "good place to live" reflect their own place needs and individual concepts of 'livability'. Seniors and low-income residents, for example, consider a good place to live somewhere that is close to stores, friends and family. Conversely, residents with children look for good neighbourhood schools, open spaces or green areas, and a safe street environment. Finally, high-income residents value most the environmental and functional characteristics of a place which include its proximity to work, access to recreational sites or facilities, and the physical design and layout of the built environment.

In their descriptions of the neighbourhoods "in general terms", residents
reflect their own varied experiences there. Residents generally agree, however, that the Creek is "picturesque", "scenic", "small village-like", "countryish", "enclosed", "a unique development", "new or modern", and "well-designed and planned". These descriptions reflect residents' generally positive views of the area and their daily lives there. A couple of residents do have some negative views of their daily lives in the Creek, although the more positive assessments dominate.

Resident likes and dislikes about life in False Creek differ between those who live in high-cost market accommodation and those in subsidized non-market housing. The juxtaposition of market and non-market housing gives the development a clear "front" and "back" to which residents often refer. The majority of subsidized housing lies either on the "back" of the development, with relatively poor waterfront views, or at the rear of individual housing enclaves. Housing units at the back face the major thoroughfares that surround the neighbourhood and are exposed to the roar from high volumes of traffic. In addition, they have no significant view of the waterfront, downtown area, or north shore mountains. Residents are "very aware" of the relative status of their location, and refer to themselves as either "back" or "front" people.

This social and physical distinction clearly influences residents' views of the Creek. Renters who live at the "back" of the development, for example, dislike "the high volume of traffic", "traffic noise", and the "dirt and pollution from traffic". Conversely, high income owner-occupiers dislike "the falseness of the social mix", "the lack of adequate parking space", and "the continued exposure to construction noise". Middle-income owners, and to a lesser extent middle-income renters, share these concerns. They echo the laments of low-income renters regarding traffic noise along the periphery of the development, as well as those of high-income residents relating to difficulties
presented by the engineered social mix and the continued local construction within the eastern phase of the development. Further complaints of the middle-income residents extend to include "traffic noise that makes it difficult to think", and the problem that "a single person does not feel at home in a family-oriented neighbourhood". In addition to these shared dislikes, middle-income owners and renters both feel that recent rent and property price increases have made housing units "overly expensive", although the units are "small and cramped".

Resident "likes" in relation to living in False Creek focus primarily on the environmental and functional features of the site. The features residents appreciate most include the seawall, park, pedestrian walkways and the garden areas. From an environmental perspective, resident "likes" centre on the "country in the city feel" of the neighbourhood, the "natural environment of the seawall", and the "splendid views of downtown".

Most residents express satisfaction with False Creek as a place to live. Indeed, in comparison to the former places many lived, False Creek represents an important "step up" or forward:

I used to live in L.A... and by comparison this is idyllic.

It's a great location... It couldn't get much better.

I can't think of anything I dislike about living here.

With the exception of the concerns 'back' residents have about the local area, the majority of residents have positive views of False Creek. Those residents whose homes are on the back of the development are particularly unhappy about the heavy traffic flows that dominate the perimeters of the site. The feelings of these residents are summed up by Larry whose suite overlooks Lamey's Mill Road:
"It's hard to be positive about the place with all the traffic noise . . . I can't use my balcony either, it's too noisy."

Satisfaction with False Creek as a place to live is one thing, but to translate this into a sense or feeling of belonging seems difficult. Residents exercise caution in discussing the concept of belonging, and the implications that extend from it. For seven residents, the concept of belonging is something they had "never really thought about". Answers from these residents, therefore, included non-committed responses such as "that's a difficult question", or "that's hard to answer".

A smaller number of residents, five in total, consider Vancouver the geographical community to which they belong, while False Creek is "where they currently live". These residents, thus, consider themselves "Vancouverites" first and False Creek residents second. Those residents who feel some sense of belonging to False Creek, have resided there for similar lengths of time and are in the same life-cycle stage. Long-time residents, who have lived in the area for ten years or more, many of whom are self-described "empty-nesters", do have some emotional attachment to False Creek that extends beyond their view of it as simply somewhere they live. Even this group of interviewees, however, shows a certain reticence which tarnishes their sense of belonging, and is reflected in "periodic discussions" of a future move to a more isolated or relaxed setting such as "the Sunshine Coast", or "the Gulf Islands".

For a final group of residents in the twenty-four to forty-five year age range, False Creek forms at best a community that meets many of their needs: "close to the Downtown core", "good access to the parks and waterfronts", and "a safe environment for children". The concept of "belonging" to the area is either inappropriate or has not been considered.
6.4.3 Residents' Soundscapes

a) The Nature of Residents' Soundscapes

As in the Commercial Drive area, the composition, complexity and structure of residents' soundscapes vary. Not only does the nature and type of resident acoustic experience differ, but so too does the detail and depth of their experiences. These range from the shallow and seemingly indifferent, to the candid, dynamic and involved (Table 12).

For approximately half the residents interviewed, the acoustic nuances and rhythms of the community are beyond their personal experience of life in the area. The acoustic experiences of these residents include a limited number of sounds, which are further only briefly described in spatial and temporal terms. References to the local area, in general, are similarly vague, while their reflections on the community itself echo the area's more obvious characteristics, such as its "beautiful location", "super views" and close proximity to downtown. As further elements in the specific form and structure of their local soundscapes, most of the residents, who fit broadly into this first grouping, live in one of the several high rise blocks situated throughout the development, generally work outside of the community during the day, and spend only a small portion of their leisure time in the local area, largely on weekends.

Although the residents whose soundscapes retain this detached nature and low level of interest belong to different socio-economic groups, have varied lifestyles and live in different areas of the site, the acoustic experiences of one resident, Carol, reflect the nature of these residents' soundscapes. Carol lives in the eastern neighbourhood of Heather. She regards False Creek, first and foremost, as a picturesque and "beautiful place" close to the downtown area. In addition to her home in False Creek, Carol owns another in the Los Angeles
Table 12

<table>
<thead>
<tr>
<th>General Soundscape Characteristics</th>
<th>Specific Soundscape Features</th>
<th>Dominant Sense of Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Weakly Defined</td>
<td>Few sounds heard; focus on traffic noise; negative perceptions of local sounds</td>
<td>No well-defined sense of place; feeling of living on the back.</td>
</tr>
<tr>
<td>2. Functional, part of everyday life</td>
<td>Different types of sounds heard; little awareness of variations in sounds over time and space; emphasis on the quiet nature of False Creek; noted absence of local traffic sounds</td>
<td>Functional sense of place; False Creek forms a centre for local activities.</td>
</tr>
<tr>
<td>3. Dynamic, detailed</td>
<td>Awareness of many different sounds: sounds provide, information on local events; emotive responses to specific sounds; sound memories. Enjoyment of sounds.</td>
<td>Strong sense of place; spend a lot of time in the local area; a financial stake in the area; positive perceptions of the Creek</td>
</tr>
</tbody>
</table>
area, and divides her time between the two, as her work dictates. She notices considerable differences between the two cities, and finds Vancouver much more conservative and "British". She purchased her home in False Creek, in part, as an investment given the relatively "inexpensive nature" of condominiums in Vancouver as compared to Los Angeles. Carol's responses to questions on the sounds that she hears in and around her local area are brief, or uncertain and include a lot of "don't knows", "couldn't says" or simple "yes" and "no" answers. She further remarked, both before and after the interview, that sounds were indeed "a strange thing to study".

For a second smaller group of residents, the local acoustic experience is one dominated by traffic noise. Residents who live on the back of the development, and whose homes face or overlook the major thoroughfares that surround the site, find the heavy traffic flows all week long to have an overriding influence on their impressions of local sounds. The discussion of local sounds for these residents centres on largely negative experiences, with individual sounds more frequently referred to as "noise". Larry, one resident whose home looks out over Lamey's Mill Road close to the Granville Bridge slip-roads, expresses the frustrations of these residents when he describes his own home space as "ridiculously noisy". Larry makes only limited use of his balcony because of the traffic noise, and occasionally has problems watching television, especially during the summer months, when it is "bloody impossible to hear yourself think" with the windows open.

For a final group of residents, who make up just less than one third of those interviewed, the local acoustic environment forms an integral component of their daily lives. Local sounds have a dynamic and rich character for these residents, associated with the changing nature of daily, weekly and even seasonal routines. Their impressions of the Creek include the identification of
distinct spaces each with their own unique sounds.

Although the residents whose soundscapes retain this rich quality have varied lifestyles and places of residence, they are all attached to the local area in social or functional terms. The acoustic experiences of Debra, for example, reflect many of the characteristics of this group. Debra originally moved with her husband to False Creek from Commercial Drive four years earlier. They initially lived on the back of the development, in a unit that overlooked the busy thoroughfares surrounding the site. After about one year in this location, they took the opportunity to buy a "smaller unit" on the front "away from the traffic and noise". Since the move, both Debra and her husband noticed many changes in the sounds they hear - especially the dramatic reduction in traffic noise, as well as the accompanying reduction in dust and fumes. For Debra, who has two young children, her local acoustic environment west of the Spruce Marina is rich in detail, and includes an eclectic mix of sounds from the local daycare, birds, and Granville Island across the inlet. The configuration of the local built environment further results in waterfront sounds being "funnelled up" into the environs of her small backyard. Debra considers her local acoustic environment a vibrant and integral part of the local streetscape.

While the preceding groupings again form useful summaries of the overall nature of residents' soundscapes, they provide only broad descriptions of the individual sounds residents hear and their reactions to them. The experiences of individual residents inevitably straddle the boundaries of these broad summaries and are thus explored further below on the basis of sound type.

b) Types of Sounds

i) Traffic sounds

As in the Commercial Drive area, traffic sounds form one, if not the major,
component of residents' soundscapes. All the residents regularly hear traffic sounds, and consider them, more or less, intrusions into their daily lives. The majority of residents accept traffic sounds, albeit with some resignation -"it's part of city living", "the same everywhere now-a-days", and "better than some places", although a smaller number consider them in more critical terms: "they're a pain", "awful", and "a real problem".

Resident descriptions of traffic sounds not only reflect their individual level of exposure to them, but also their own listening experiences, and acoustic preferences. Across the study area, residents hear two major types of traffic sounds: first, the near constant, heavy foreground traffic flows along the periphery of the site, and second, the more distant or background rumble of traffic sounds punctuated by infrequent local vehicle sounds, that characterize the more sheltered waterfront or interior regions of the Creek.

Residents whose homes lie at the back of the various enclaves, find the roar of traffic constant and intrusive. This prolonged, intense roar frustrates them, and affects both the character of their home environments as well as their state of mind:

The roar of engines and the screeching of tires and brakes is a constant annoyance.

In our particular building the noise is pretty bad . . . The residents met as a group and we all agreed it's a problem.

The traffic feels like it's in my front room . . . The noise makes me tense and sometimes I can't sleep.

Despite the near constant roar of traffic, back residents notice little detail or variation in the traffic sounds they hear. Indeed, they only broadly distinguish between sounds, with the roar from the local bus service one sound which stands
out against the background of "constant traffic noise".

Yet, residents who live in the more sheltered front or interior zones of the Creek hear mostly "distant" traffic sounds which are generally less intense and less intrusive, and thus contrast with the high intensity roar of periodic traffic flows:

The only traffic sounds I hear are distant ones from the Granville Bridge

The traffic from the bridges forms a distant hum or drone . . . which you just get used to.

This contrast between higher intensity local traffic noise and the ambient rumble of more distant traffic sounds is highlighted by two residents who have moved from "back" to "front" locations to escape, at least in part, the intrusive sound of heavy local traffic flows:

When we first moved to False Creek we lived in a high rise on Lamey's Mill Road . . . The traffic was awful . . . we couldn't hear ourselves talk . . . now we only hear the distant bridge traffic . . . a major change.

There's a sort of rumble from the Bridge (Granville) . . . When we lived at the other end we were right under Cambie (Bridge).

Residents who live on the front of the development generally consider themselves "fortunate" to hear so few traffic sounds. For many, the few high intensity local traffic sounds they hear contrast with the traffic noise they associate with previous places in which they have lived:

It's much better than it was when we lived on the Drive (Commercial).

Compared to L.A. . . . this is like the country.
Residents' individual responses to traffic sounds differ. Brent, for example, an owner-occupier who lives close to Lamey's Mill Road in a townhouse style unit, claims not to hear the high intensity traffic sounds that characterize his local streetscape: "Being where we are we don't get traffic noise . . . the noise never bothers us." His insistence that he does not hear the traffic from outside, which was clearly audible in his frontroom during the interview, was contradicted by his periodic use of the expression that "it didn't bother l.im". His unwillingness to consider traffic sounds as part of his local soundscape suggests some dissonance between his actual and desired local acoustic environment.

In contrast to the residents whose homes lie on the back, those who live either on the front or in the interior of individual neighbourhoods discern some information from the smaller number of local traffic sounds they hear, even though they also consider them both an "annoyance" and a "frustration". Residents in the Heather neighbourhood, for example, periodically notice individual vehicle sounds from the marina pub, as well as those from the mobile book bus and trucks making deliveries to local stores. In addition, two residents associate monthly and weekly meetings at the local community centre with increased traffic noise in Ferry Row and Millyard.

ii) Non-vehicle transportation sounds

As a complement to the distant and local traffic sounds that form basic components of their local soundscapes, residents also hear a small group of additional transportation sounds. These additional transportation sounds include those from trains, boats, seaplanes, jet aircraft and traffic helicopters.

The varied sounds of trains and the boats are the ones that residents hear most often in and around the Creek. As in the Commercial Drive area, residents
recall these sounds with much greater affection than they do the more anonymous traffic sounds that dominate the local soundscapes of some residents, and pervade those of others. Thus, while traffic sounds commonly form either annoying or mundane elements of residents' local acoustic worlds, those from trains or boats clearly stand out and leave a positive impression, although those of aircraft do not.

Fourteen of the twenty-six residents hear boat sounds on a regular basis, twelve hear trains, and fifteen hear aircraft. In addition to the twelve residents who hear train sounds as part of their current soundscapes, three residents claim to have heard them in the past, but do so no longer.

The transportation sounds residents hear vary with the locations of their homes, as well as the nature of their daily routines and listening habits. Residents whose homes lie on the front of the development, for example, regularly hear the splutter of boat engines, especially those who live close to the two local marinas:

Being right by the marina we get some noise from the boats there . . . It's generally when they come and go that we notice them.

Early evenings and on weekends . . . I hear the boats from the marina . . . It's busy, especially on weekends.

The distinctive clinking and tinkling sounds of aluminum masts also form a near constant element of these residents' soundscapes, and one that forms a backdrop for the more intermittent sounds of individual boats coming and going.

Six residents who live in the western half of the Creek, also hear the distinctive sounds of dragon boat crews. While some of these live directly on the waterfront, others live slightly back from it. None, however, live on the back of
the development. The sounds residents hear from these boats include both the beating of drums which all six hear, and the chants of the crew which four hear. These sounds add a splash of acoustical colour to local soundscapes, and residents find them "vibrant", "exciting", "exotic" and "fun". Five residents specifically associate these sounds with the early evening period, "around supper time", and thus define them in part as a temporal 'landmark' or, literally, a soundmark.

The 'exotic' sounds of the drum and 'primitive' chants of the crew form distinctive components of residents' local soundscapes. Indeed, they both regularly gain the attention and interest of those residents whose homes overlook the narrow section of the inlet south of Granville Island, or those whose daily routines place them on the waterfront in the early evening period. Frank, a long time resident whose ground floor condominium fronts onto the inlet, describes the boats thus: "With the sound of the drum and the chants they're a regular evening thing . . . False Creek's probably the only place you'd see and hear something like this."

In addition to boat sounds, those of trains also add to the character of residents' soundscapes. As with the boat sounds, trains are mostly part of the soundscapes of residents who live either on the front or in the interior sections of the neighbourhood. Unlike the sounds from the dragon boats, however, train sounds also figure in the soundscapes of residents who live in the eastern half of the development, whose homes are closer to the rail lines and rail yards east of Main Street.

The train sounds residents hear include the distant call of diesel train horns, which all twelve hear, and the rumble of heavy engines and rolling stock, which four hear. Both sounds are part of residents' late afternoon or early evening soundscapes, times that correspond not only with the movement of the trains,
but also to the time that many of the residents who work outside of the house return home.

From a geographical perspective, residents consider the trains to be removed both spatially and temporally from the local area: "sounds from across the bay", "distant train sounds", or "sounds from the past". For three Spruce residents, train sounds were an original component of their local soundscapes, but have since faded from earshot with the closure of the rail line to the south of the Creek. Similarly, two Heather residents find the current volume and number of train sounds much lower than it was in the past. Both attribute these changes to the closure of local lines, and the "gradual demise" of rail transport in Canada.

Fifteen residents hear a variety of aircraft sounds. Three different types of aircraft sound stand out: those of jet aircraft which ten hear, seaplanes which fourteen hear, and traffic helicopters four hear. Of the three sounds, residents find the overhead rumble of jet aircraft, as they approach or leave the Vancouver Airport located some ten kilometres to the south, the most dominant and the sound they hear most often. As one product of their number and intensity, most residents find these sounds "bothersome", and consider them to detract from the positive features of the local acoustic environment. Several residents consider this low frequency rumble a "common noise" in the city: "It seems like the whole of Vancouver is on a flight path . . . . Everywhere I've lived there's aircraft noise. . . . It's like you can't escape it."

In contrast to the sounds of jet aircraft, the buzz of seaplanes, although considered a nuisance by residents in other parts of the city, forms a more "isolated" or "infrequent" element of residents' soundscapes on the Creek. Residents largely accept these as "Vancouver type sounds" and "part of the city routine". By comparison to sections of the North Shore, the less frequent
seaplane flights over the Creek make them a regular component of residents' soundscapes although not one residents apparently pay particular attention to, nor one that they report finding invasive or intrusive.

As a final aircraft sound, four residents hear the clatter of traffic helicopters. These residents all live on the back of the development, and their homes face Sixth Avenue. They strongly associate the helicopters with traffic surveillance in and around Broadway Avenue and the Cambie and Granville Street Bridges, especially during the late afternoon and early evening rush periods when there's "always hold-ups somewhere". The helicopters are "damn noisy", and form "somewhat irritating" or "grating" elements of residents' soundscapes.

Overall, the impressions residents have of non-traffic transportation sounds vary. For the majority, transportation sounds form limited components of their local soundscapes, although they do on occasion 'get their attention'. For residents who live on the front of the development, and who are at home during the day, or spend their leisure time around the local area, transportation sounds assume a much greater role in their local soundscapes, particularly those of boats from the marinas, trains from the rail yards east of Main Street, and seaplanes overhead. By contrast, residents who live on the back of the development hear the clatter of traffic-spotting helicopters most often which they associate with heavy local traffic flows, and thus view critically.

iii) People-sounds

A wide and diverse range of people-sounds contribute to the flow and rhythm of residents' soundscapes. Residents place a considerable emphasis on the people sounds they hear, and relate many of them to the daily routine and neighbourhood life. The people-sounds residents hear are mainly those of voices, although in addition they also notice a smaller number of sounds of
people at work, at play, or merely just passing by. Residents hear these sounds at two levels: first, as ambient components of particular environments or places, and second, as more specific elements of their local soundscapes that arrest their attention or interest.

As ambient elements, residents strongly associate people-sounds with the local seawalk, and the numerous footpaths that criss-cross individual neighbourhoods. The people-sounds residents hear most often include the footsteps of joggers or pedestrians which fifteen residents hear, people talking, shouting or laughing that ten hear, and the sound of cyclists whizzing by that nine hear.

The seawall west of the marina (Spruce) is overrun with joggers and cyclists at lunchtimes and weekends.

A lot of people come on the weekend . . . just to visit and walk along the shoreline.

In addition to the sounds of people out walking, jogging or cycling, three residents who live close to the western end of the seawall also include recreational sounds from the community centre sited on the south-eastern corner of Granville Island as part of their local soundscapes. The particular people-sounds these residents hear regularly include the daily and early evening sounds of tennis lessons and matches which drift across the narrow stretch of water. Ethel, whose home fronts on to the seawall, describes them thus: "You get some real characters playing . . . shouting and all sorts . . . I get the impression they think it's a national championship or something."

While the seawall and pathways are two local settings residents strongly associate with people sounds, a third is the western half of the park next to the
Spruce Neighbourhood. The people-sounds residents hear in this part of the Creek include those of children at play in and around the school and the small playground area, as well as the numerous shouts and cries from softball and baseball matches played on the local diamond in the evenings and on weekends. Residents whose homes lie close to the baseball diamond report that they regularly hear shouts and cries in the early evening although they do not pay any special attention to them.

In addition to their association with the waterfront and recreational sections of the community, residents also consider people-sounds part of the ambience of the residential sections of the community. Fourteen residents regularly hear pedestrians passing by their homes, for example, while twelve hear neighbours talking or visiting, eight note children playing and five hear the shouts and laughter of restaurant and bar patrons. Given the local nature of these sounds, and their limited physical intensity, the people-sounds residents hear vary depending on the location of their homes, as well as the nature of their daily routines. Residents whose homes lie close to Leg-in-Boot Square and the local marina in the Heather Neighbourhood, for example, regularly hear voices and shouts from the marina and the local pub in the evening, and from pedestrians and boat owners in and around the square during the day.

As a variation of this broad distinction, residents clearly distinguish between people-sounds from the pub and those from the square and its environs. While they find the pub sounds generally intrusive and unwelcome, those from the more casual or spontaneous interactions that characterize the square are more positively received. Barbara, a homemaker and ten year resident of the Creek, finds the footsteps and voices of passersby outside her one bedroom ground level condominium unit a source of comfort and support. It also provides some means of contact with the "outside world": "The voices of the neighbours
as they pass by I hear . . . It makes the place seem lived in or friendlier . . . It's good to know there's someone about."

The people-sounds Heather and Spruce residents hear differ. In addition to pedestrian sounds from the seawalk and footpaths, the daily, evening, and weekend soundscapes of Spruce residents include the sound of school-age children at play in the varied courtyard spaces of individual enclaves, as well as the daily sound of pre-school age children from the local day care. Two seniors and two homemakers who live in the Spruce Neighbourhood, find the children’s voices and activities an important link for them with daily life and community routine. In the words of Monica, a former nursing home resident who moved back into the community within the last year: "The sound of children playing . . . It reminds me of when I was a lot younger . . . and how things change and go on . . . It's nice to hear them."

As an extension of their contribution to the character of local streetscapes, residents also use specific people-sounds as indicators of particular local events or activities. Residents whose homes overlook Leg-in-Boot Square, for example, regularly hear late night celebrations from the marina. Similarly, dramatic increases in the volume of children's voices signal the start and finish of school, as well as recess periods for residents who live close to the school, while the marine-like chants of the Pacific Road Runners Club form a distinctive soundmark for the three residents who live next to the waterfront.

One final set of people-sounds eight residents hear are those from adjacent housing units that spill over into the street and adjoining housing units. While some hear them, others do not. Residents identify the close physical proximity of individual units, and their "cheap construction" as the reasons for this sound transfer, although the habits and behaviours of specific neighbours are also a factor. Residents have strong feelings toward these sounds and consider them
both an "annoyance" and an "irritant", which often results in feelings of frustration and, on occasion, fear. Two residents regard these sounds as one further problem resulting from the engineered or "false" social mix of the community.

The limited physical intensity of people-sounds, as compared to technological or mechanical sounds, dictates that the majority of people-sounds residents hear are from local activities or events that unfold close to their homes, or the other local spaces that form part of their daily world. Unlike traffic and other transportation sounds that frequently come from sound sources outside of the Creek, the majority of people-sounds residents hear are closely tied to their local geographic environs, and cover a much smaller acoustic or geographic space. As one result of this, the soundscapes of back residents include much fewer people-sounds than those of residents who live either on the front or in the interior sections. The higher ambient sound levels of the peripheral sections of the community, along with their explicit transportation orientation, results in local acoustic environments largely devoid of people-sounds. Back residents who hear people-sounds within their local soundscapes, frequently associate them with either community spaces away from their homes, for example, the seawall or park, or with sound transfer from neighbouring housing units.

iv) Local business sounds

Business sounds form a more limited component of residents' soundscapes, that contrasts with the pervasive presence of traffic sounds and the attention-getting character of people-sounds. Seventeen residents hear business sounds, although for most these are infrequent elements of their local acoustic worlds. Indeed, only five residents hear business sounds from more than one source. The small number of business sounds residents hear reflects the
dominant residential focus of False Creek. Four hear construction sounds, four
report marina sounds, three hear pub sounds, three delivery vehicles, three the
sound of industry from Granville Island, two the sound of local garden and
street maintenance crews and one each that of couriers and police dog training.

The higher intensity, and invasive banging, hammering, and drilling from
ongoing construction projects along the eastern margins of the Creek stand out
the most, with those from the marina playing a lesser role. Heather residents are
exposed to construction sounds the most, and for individual residents these
sounds generally form "unwelcome" components of their local soundscapes with
the high intensity impact and "mechanical" nature of the sounds described as
intrusive. Indeed, residents consider these sounds not only to invade the privacy
of their own homes, but also to detract from the ambience or character of the
neighbourhood:

I keep my windows shut when they're out there . . . it's my only real
defence.

No one uses the square below because of the noise and dust . . . they won't
until the building is finished.

The duration and continuity of construction sounds is a definite frustration for
the residents "forced to live with them". Two long-time residents of the Heather
neighbourhood, for example, have "put up with" construction sounds as "daily
occurrences for the past thirteen years", with "continued hammering, drilling
and banging" a common event. Most residents did not expect to hear
construction sounds prior to moving to the area. Their pre-residence
expectations of "the peace and quiet of suburban living", contrast with the
"constant barrage" of construction sounds and result in resident dissatisfaction.
The "peace and quiet" of other housing blocks within the community serves as a further reminder for two local residents, at least, of what the place "should sound like."

As with construction sounds, marina and pub sounds also form intrusive elements within residents' "residential" or "quiet neighbourhood" soundscapes. The sounds of members or residents at work on their boats, and the sound of various deliveries, are a regular part of the local soundscapes of those residents who live next to the Spruce marina in the west or overlook the Heather marina in the east. For the majority of residents marina sounds are not considered business sounds, but rather part of the waterfront ambience. These residents live away from the marina sites, however, and are aware of only a few of the numerous marina sounds that residents who live close to them hear. Philip whose home overlooks the Heather Marina explains: "It's different when you live right by it . . . Sure it looks nice . . . but they kick up a real racket sometimes". Similarly, the music and shouts from the pub in the evenings annoy three residents who live close to the marina pub and restaurant in Leg-in-Boot Square. As with sounds from the marina, these pub and restaurant sounds not only form part of the local soundscapes, but also invade the inner acoustic environments of their homes.

Pub-related sounds from the marina extend east of the pub site as a result of the valet parking service offered by the bar. The valets drive patrons cars "at great speed" along Moberly Road to the off-premises parking lot. Fiona, a long-time resident of the neighbourhood, finds the sound of restaurant valets "speeding and horsing around in other people's expensive cars . . . disturbing", and another 'downside' to the location of the pub and restaurant on "her doorstep".

In addition to business sounds from the marina and pub, three Heather
residents also hear the sound of local delivery vehicles. The residents who hear them live close to either the small array of local stores in Leg-in-Boot Square, or those on Moberly Road to the east of the bus terminus. The engine sounds from these vehicles and their "reversing beepers" form "infrequent" or "weekly" components of residents' soundscapes, which have only "a minor impact" on local acoustic environments. For two of these residents who remain home during the day, the weekly arrival of delivery trucks is a well-known routine; part of its familiar nature being the varied sounds that accompany it.

In the western half of the Creek, residents hear a different array of business sounds. The sounds of industry from the cement plant on Granville Island form an ambient component of the soundscapes of those residents whose homes lie on the waterfront. The sounds residents hear from the cement plant form a "constant roar", a "low hum", or a "sort of rumble", and they consider these sounds as "constant" or "continuous". Indeed, residents describe the weekend absence of these sounds as "somewhat of a relief" or respite from the "daily drone".

In addition to the sounds of industry from Granville Island, two residents also hear the much less frequent sounds of maintenance crews. Both of these residents, one retiree and one homemaker, associate the sound of the crews with the care and maintenance of the "numerous flowerbeds and lawns" that characterize this portion of the community. The localized activity patterns of both of these residents place them either at home, or in the local area, for the majority of the weekday.

As a final example of local business sounds, two residents from the Heather neighbourhood regularly hear the daytime sound of bicycle couriers "hurrying along pedestrian walkways where they don't belong", and the evening sound of "police dogs training in the back alleys". In both cases, the residents who hear
these sounds consider them "infrequent" but "noticeable" elements of their local acoustic worlds. The couriers are viewed as a "nuisance" on account of their "threat to pedestrians", while the police dogs form an interesting deviation from the normal evening routine, although "a bit frightening . . . until you know what they are."

Overall, business sounds form only a limited component of residents' local soundscapes, although some consider them negative ones. For the most part, the criticisms residents have of business sounds reflect their opposition to the businesses themselves, and their operation in a residential or "quiet neighbourhood". Thus, residents consider these sounds "out of character" in a residential area. Those residents whose homes are close to either the pub or construction sites in the Heather Neighbourhood, and to the southeastern tip of Granville Island in the Spruce Neighbourhood are exposed to the highest sound intensities and the most frequent business sounds. As a reversal of the pattern of exposure to traffic sounds, back residents hear few if any business sounds. The relative absence of business sounds from most residents' soundscapes contrasts with their much greater presence in the soundscapes of Commercial Drive residents.

v) Natural sounds

Twenty-five residents consider natural sounds part of their local soundscapes. The most common natural sounds reported are those of birds which twenty-two hear, the wind or rain which eighteen hear, and the sound of water and fountains ten hear.

As in the residential sections of the Commercial Drive area bird sounds form a background component of residents' soundscapes; a sound "generally there", "always around" and "heard in a lot of different places and at different
times". Eighteen residents strongly associate bird sounds with their local street, as well as the environs of their homes. Most, however, recall few of the details of the bird sounds they hear, but rather group them together as a near constant element of their local acoustic environment. The bird sounds they do hear are described in generally positive terms and referred to as "pleasant", "cheerful", "gentle" and "quiet". Residents hear bird sounds most during either the "early morning" or "early evening" periods, the most quiet times of the day for many residents, and those during which they are most likely to be at home.

Few "back" residents hear bird sounds. When they do they are generally associated with either the very early morning period on weekdays - before 06:30 in the summer months- or the early morning and late evening periods on Sundays. The lack of bird sounds from their local soundscapes disappoints two residents whose homes overlook Lamey's Mill Road. This absence is accentuated by their memories of previous places they have both lived, and the "mass of birds" which characterized them.

In addition to their ambient presence on local residential streets, twenty residents further associate bird sounds with both the waterfront and the park areas. It is the distinctive cry of seagulls that residents associate most with the waterfront areas. Six residents specifically assign the cry of seagulls to the two marina sites, three of whom live close to one of them. Ian, a long-time resident, whose condominium overlooks the Heather marina, closely associates the sound of the gulls with the marina: "The gulls flock here . . . at different times of the day I hear them . . . There's always one or two floating around . . . You can't miss them."

Not surprisingly, residents hear natural sounds in the local park, especially in and around the small lake. Four of the residents who live in the Heather neighbourhood close to the park, commonly hear natural sounds from it, as do
three further residents who visit the park on a regular basis. The particular sounds these residents hear include the honking of Canada geese which six hear, the babbling of the small waterfall and stream which five hear, and the varied sounds of the ducks and gulls which three hear.

When I first moved here I really noticed the sound of the geese flying overhead and in the park.

I used to live by Stanley Park and the sound of the geese reminds me of it . . . I don't hear them as often now.

The small stream is very pleasant . . . it bubbles along under the bridge and into the lake.

Despite the close proximity of the park and lake area to both the Heather and Spruce Neighbourhoods, the majority of residents do not readily include the natural sounds from either of them in their local soundscapes. Indeed, generally only those residents whose homes front the park, or who use the park on a regular basis, describe natural sounds from it as part of their local soundscapes. Thus, the acoustic profiles of natural sounds, especially those from the stream and smaller bird populations, are confined to the immediate environs of the park itself, and do not spread out into either the residential or waterfront areas. In addition, the natural sounds of the park are commonly drowned out by the higher intensity and repetitive sounds of traffic flows and modern industry that co-exist alongside them.

For many residents natural sounds form ambient or a taken-for-granted elements of their local soundscapes, which attract little specific attention. Clarification of the particular natural sounds residents hear was thus difficult. Resident responses to questions on the variety and range of natural sounds they hear included a number of general responses such as "there's lots", or "we have
all sorts". Upon further exploration, however, residents found it difficult to offer more detailed descriptions, and instead gave uncertain comments - "don't know", "not sure" or "I'd know them if I heard them". Many residents could not readily recall or describe the natural sounds they hear.

vi) Local sound signals

Once again the local sound signals residents hear stand out against the flow and rhythm of regular sound events. The specific sound signals that periodically resound throughout residents' soundscapes include the piercing sound of emergency vehicle sirens which twenty hear; the twelve o'clock noon O Canada horn which ten hear; foghorns from the bay area which four hear; wind chimes which two hear; and that of a neighbour's clock striking heard by one.

Residents who live on the front of the development, away from the oppressive acoustic environment of the encircling road networks, hear the largest number of discrete sound signals, although back residents, whose homes border the perimeter of the neighbourhood, regularly hear the intrusive sound of emergency vehicle sirens. Residents find the blaring sound of sirens intrusive, both for their intensity, as well as for their piercing frequency and striking intonation. Indeed, they form "an all too frequent noise":

There's a lot of sirens at this end of the Creek . . . from the main road.

I hear many sirens during the day . . . no one likes sirens though, do they?

We've got used to them (sirens) . . . It's not until you move into a place that you notice things like that.

Residents' impressions of sirens reflect the location of their homes. Thus, residents who live on the back of the site associate sirens with emergency
vehicles crossing either the Cambie or Granville Street Bridges and along Sixth Avenue. The proximity of their homes to these major routeways results in them finding the sirens "startling", "loud", and "disturbing". Back residents further associate sirens with ambulances on their way to the Vancouver General Hospital:

The sirens are from ambulances as they head to the General . . . It's a constant stream somedays.

They're heading to the hospital . . . which isn't always a pleasant thought . . . although you never really know what's happened.

By contrast, front residents have different impressions. Those whose homes look out over the marinas and the waterfront, for example, consider sirens more "distant" sounds, which they associate with the movement of emergency vehicles to the south, west and east, as well as from the southern periphery of the downtown core across the Creek to the north:

Across the Creek . . . you can even see the police cars sometimes . . . but we hear them first.

When the water's still . . . in the early evening the sound (sirens) really carries.

As a result of the major thoroughfares that surround the neighbourhood, and its inner city location, residents largely accept sirens as part of city living, although with some degree of resignation or anger:

There's so many sirens somedays that I wonder if they're really necessary. They can annoy you after a while . . . if you let them.
Residents expressed their individual resignation in numerous ways, including specific comments: "they're just a part of daily life", "we've had to get used to them", "they used to bother us but not anymore" and "I suppose they're necessary".

As a second sound signal, ten residents hear the daily blast of the twelve o'clock O Canada Horn from the top of the B C Hydro building at Burrard and Nelson. The blast of the horn figures in the local soundscapes of three residents who live in the Heather Neighbourhood, five in Spruce and two in the Alder Neighbourhood by Granville Island. Seven of the residents who hear the horn are homemakers or retirees, the majority of whom do not work outside of the home on a full-time basis, and spend most of their day "in and around" the neighbourhood. Four residents use the blast of the horn as a "definite marker" for the noon hour, and one that they "listen out for daily". Three others hear the horn on a regular basis "but not every day". The final three work either part-time or full-time outside of the neighbourhood, and as result hear the blast on a more infrequent basis. One resident, who works in a clerical position on Granville Island, uses the horn as a signal for the "lunch hour".

Although residents' impressions of the horn vary, most describe it either in detached or critical terms. Two residents find the "electronic" and "overpowering" sound ugly, while for others it seems "out of place", "artificial" and "not really to belong". As Tim remarks: "it's hard to believe it's supposed to be the national anthem... It's so anonymous."

Other sound signals residents hear, albeit on a less regular basis, include the remote sound of foghorns from the English Bay area. Three residents find the foghorns "haunting", "eerie" or "mysterious", and further associate them either with the fall when "foggy days" are "common place", or early evenings when local mists settle on the bay.
The two residents who describe foghorns in the most detail both lived on the north shore for the majority of their lives, including their childhood, before moving to False Creek. As a result, the sound of the fog horn has a nostalgic quality that serves as a reminder of Vancouver's "coastal heritage and past". Arthur, one of these residents, is critical of the current timbre of the modern horns which he considers inferior to those of the past: "The horns of today are nothing special, not like they used to be . . . The old ones were all unique."

In addition to the distinctive sounds of the sirens, the twelve o'clock O Canada Horn and foghorns, all of which originate from outside of the neighbourhood, residents hear two further sound signals which are more closely linked to their immediate surroundings. The much smaller, melodic sound of wind chimes forms part of the local soundscapes of two residents, while that of a neighbour's clock chiming is part of the local soundscape of a third. All three residents closely associate these smaller sounds with the immediate spaces in and around their own homes. Thus, for Lauren, one of the residents who hears the wind chimes, their texture and quality retain a lyrical quality, one she closely associates with her home space: "I hear them when I'm in my back yard . . . I call them the small sounds around here . . . they're really neat . . . sometimes I notice them right away . . . other times they sort of blend in."

c) Residents' Synopsis of Local Area Sounds

The sounds that residents associate most with False Creek indicate the presence of a variety of local acoustic worlds, some of which overlap, and some of which remain separate and quite distinct. Residents' soundscapes reflect the acoustic characteristics of their own local areas within individual neighbourhoods, as well as the nature of their daily routines.

Two residents who live in the interior sections of the Creek, for example,
consider the dominant acoustic characteristics of their local areas their "peace and quiet". For Garth, his local street and the immediate spaces around his home are "very quiet", especially in comparison to the other residential areas of Vancouver in which he has lived: "It's the quietest place I've ever lived in Vancouver . . . It's almost dead . . . This for me is one of the place's best features."

By contrast, residents who live close to the major roads that surround the site describe their local acoustic environments in much different terms. Six residents consider the neighbourhood a "noisy place", "a hectic environment", and a setting "crowded with traffic noise". The sounds that symbolize the local area for these residents include "traffic noise", although they also acknowledge the relative tranquillity of other sections of the Creek such as the waterfront, albeit as a separate acoustic environment physically divorced from their own residential spaces.

Between these two extremes, the majority of residents describe the characteristic acoustic elements of their local areas in more balanced terms. Four residents, for example, emphasize the "absence of local traffic" which has a significant impact on the overall sound levels in their local area which they consider low, with few high intensity sounds. For other residents, the sounds that echo its suburban, "park-like character", its waterfront setting, as well as its inner-city location best represent the Creek. Thus, the specific sounds residents associate with their own local areas include the natural sounds of "seagulls and geese", the waterfront sounds of "boats from the marina", the park and waterfront sounds of "joggers", "cyclists" and "pedestrians" and the suburban sounds of "children playing" and "neighbours talking in the street".

Two Heather residents who live close to the ongoing developments that characterize this particular section of the Creek, regard the "construction sounds
or noise" that they hear on a daily basis as symbols of their daily lives in the area: "We've put up with the noise and dust for all of thirteen years . . . It's part of daily life." The local acoustic environments of both of these residents are uninviting and even 'inhuman', with a daily barrage of construction sounds the norm.

The sounds residents consider most representative of their local areas clearly match those that they hear most often. Thus, residents who consider False Creek something of a "haven from city noise" hear natural sounds ("birds and birdsong"), waterfront sounds (boats, joggers and cyclists) and people-sounds ("neighbours chatting, children playing") most often. By contrast, residents who live close to the major roads that encircle the Creek report traffic sounds from the continuous stream of cars that pass by their homes as the major sounds they hear, with people and natural sounds a distant second and third.

Back residents aside, the sounds residents hear most often reflect the residential and recreational characteristics of much of the Creek. These specific sounds thus include a combination of waterfront, natural and people sounds, although the rumble of "distant" traffic flows is also a common component of residents' soundscapes. As a variation on these keynote sounds that result in some acoustic similarity between individual sections of the Creek, there is also a series of more individual sounds unique to specific areas or places. Residents in the Spruce Neighbourhood, for example, who live away from the waterfront, regularly hear the sounds of "school kids", "kids' voices from the daycare" and "children playing in the evening". By contrast, Spruce residents whose homes face the waterfront focus rather on the footsteps and voices of "joggers", "pedestrians" and the whir from "cyclists".

Heather residents hear a further array of people and natural sounds, which differ both in their frequency of occurrence and intensity from those Spruce
residents hear. The natural and people sounds Heather residents hear centre upon either the waterfront or the park areas and include "voices" and "hammering and banging" from the marina, "ducks and gulls by the marina", "evening celebrations" from the local pub and "joggers and cyclists going by". Heather residents rarely hear children at play.

Residents consider the most distinctive or noticeable local sounds they hear to include "the sound of the dragon boats", wind chimes, the "rattling of the boat masts", the "noisy book bus", the "honking of geese as they fly overhead", the cry of seagulls and "music from the summer festivals in the Sutcliffe Park". The local sounds back residents consider most distinctive differ from those front or interior residents identify. For back residents the most distinctive or noticeable sounds are those of emergency vehicle sirens, car horns, the sound of the local buses and that of "motorbikes or loud, noisy cars". In contrast, front residents focus primarily on sounds from the seawall and waterfront areas.

The particular sounds residents identify as the most distinctive further reflect their broader characterizations of False Creek. Thus, front residents who view the community primarily in residential or recreational terms, also highlight similar sounds as the most distinctive or noticeable. Debra, for example, considers music from the summer festivals held in Sutcliffe Park the most distinctive or noticeable sounds she hears, sounds which echo and reinforce her predominantly recreational view of the Creek.

In partial defence of the residential and recreational orientation of much of the local area, residents consider both the natural sounds they hear, as well as the relative "peace and quiet" of the community as worthy of some form of protection. Over half of the residents emphasize the need to retain the relative "peace and quiet" of the local area. In part, this is prompted by what residents see as the threat of rising local sound levels, a product of increased local traffic
flows and the continued development taking place on the north shore of the Creek.

As an extension of these fears, the majority of residents consider local sound levels either to have risen during their residence in the neighbourhood or to have "stayed the same". Only two residents consider sound levels to have fallen, one who lives adjacent to a recently completed housing development in the Heather Neighbourhood, and the other who has recently moved from the back of the development to the front.

Residents consider increased local traffic flows the major reason for rising local sound levels, although some also relate them to increases in local population levels and pedestrian flows. Heather residents view both the continued growth and expansion of the community along its eastern margins, as well as the operation of the pub and restaurant at the marina as the cause. Residents who live on the waterfront cite the increased popularity of local parks and walkways for pedestrians, joggers and cyclists from all over "the west side" as well as the parallel rise in the popularity of Granville Island as a tourist and visitor attraction.

As a product of rising local sound levels, as well as changes in the area's form and function, a small number of residents are aware of sounds that they used to hear but now no longer do so. The sounds that have faded from earshot include the "shunting of the trains", gone with the closure of the railway to the south, as well as the redevelopment of the northern portion of the Creek, and "children playing", lost in the gradual replacement of middle-income residents with children by singles, couples or retirees on account of the "small size of the housing units".

Resident responses to the loss of these sounds are influenced by their deeper reactions to the structural changes they reflect. Thus, while residents do not miss
the closure of the railway to the south, they view with distrust the massive redevelopment planned, and partly completed, on the north shore of the Creek. The gradual replacement of "original tenants" with new higher income and more "yuppie" residents is a further change some residents view with concern.

d) Residents' Response to Sound Recordings

Of the four local sound events played for residents, the majority correctly identified the sound of the seaplane (twenty-one residents), followed by the marina sounds reported by sixteen residents, the game sounds from the baseball diamond reported by thirteen residents, and the bird and running water sounds from the park lake area identified by ten residents (Table 13). Although the majority of residents recognized the bird and water sounds, they were unable to identify the place in the community in which they were recorded.

Residents' awareness and knowledge of these sounds relates, at least in part, to their activity patterns in the local area. Those residents who spend time in the environs of the recording site, or pass by it on a regular basis, were the most likely to be able to identify both the nature of the individual sounds heard, as well as the location of the recording site. Within this general relationship of awareness and interaction, however, some important exceptions emerge. Twenty-one residents know the distant sound of seaplanes. The high level of resident awareness of these sounds relates both to the intensity and distinctive character of the sound itself, as well as residents' general association of the seaplanes with the Vancouver area. Similarly, the sound of Canada geese honking, and that of running water are two sounds which residents immediately recognize, although they were unable to pinpoint the location in which the recording was made.

For the sixteen residents who correctly identified both the marina sounds,
Table 13
False Creek: Residents Correctly Identifying Sound Recordings

<table>
<thead>
<tr>
<th>Sound Recording</th>
<th>Number of Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seaplane</td>
<td>21</td>
</tr>
<tr>
<td>Marina Sounds (boat masts, seagulls)</td>
<td>16</td>
</tr>
<tr>
<td>Baseball Game (local diamond)</td>
<td>13</td>
</tr>
<tr>
<td>Lake and stream</td>
<td>10</td>
</tr>
<tr>
<td>Residential Street Recording</td>
<td>14</td>
</tr>
<tr>
<td>Park Sounds</td>
<td>11</td>
</tr>
</tbody>
</table>
and the recording site, the key sound "which gave it away" was the "rattling" or "clinking" of the boats masts. Residents whose homes overlook the marina, consider this distinctive, albeit low intensity sound, a basic component of their local soundscapes - "we hear it all the time". In addition, residents who regularly walk along the seawall also associate the sound with the marina areas.

As part of a general distinction between the acoustic experiences of local residents, those who live in the western half of the community, especially in the Spruce Neighbourhood, have a much greater awareness of park sounds associated with the baseball diamond than residents who live in the Heather Neighbourhood. Conversely, residents from the Heather Neighbourhood have a much greater knowledge and awareness of the acoustic environment of the eastern half of the park which includes the sounds of geese, and those from the lake area.

Within this general relationship, however, residents whose homes overlook the major roadways that surround the site in both halves of the community demonstrated much lower levels of awareness of the local sounds played for them than front residents, with the one exception of the sound of seaplanes. For back residents, in both halves of the site, it is the heavy local traffic flows that dominate their soundscapes.

As with their identification of specific local sounds, residents' ability to distinguish between the residential and park sounds recorded in their own community and those made outside reflects both their place of residence and their daily routines. Residents found it difficult, for example, to distinguish between the different park sound recordings. Indeed, five admitted their choice was a "guess". Residents from the Spruce Neighbourhood were most successful in correctly identifying local park sounds - with back residents once again uncertain as to which were local sounds and which were not.
The fourteen residents who correctly identified the local residential recording singled out the absence of local traffic flows as the key feature. This absence of local traffic flows is something residents emphasize as one of the community's best and "most sought after" characteristics, along with its "park-like" setting and design.

6.5 Ambleside

6.5.1 Resident Profiles

The twenty-eight Ambleside residents, evenly divided as to men and women, come from a variety of backgrounds, and offered a range of opinions on the neighbourhood and their daily lives there (Table 14). They range in age from nineteen through to seventy-five, and have lived in the area from just over two months to over fifty years. They include six retirees, seven homemakers and mothers with young children, and fifteen residents who work either full-time or part-time outside of the home in careers that range from bus driver to financial consultant. Eight live in rented accommodation, while twenty are owner-occupiers. The housing they occupy ranges from a bachelor suite in a high rise block to detached single family dwellings, with the majority resident in either apartments or condominiums. Twenty share their accommodation with family members or friends, while eight live alone.

6.5.2 Residents' Feelings Towards Ambleside

Residents generally have positive views of Ambleside both as a place to live, and a place to spend their recreational or leisure time. Their individual views of Ambleside, while having some common ground, closely reflect the diversity of their daily routines, as well as their past experiences in the local
Table 14

Ambleside: Characteristics of Residents Interviewed

<table>
<thead>
<tr>
<th>Gender</th>
<th>Men 14</th>
<th>Women 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>18-24</td>
<td>65 and over</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>25-34</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>35-44</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>45-54</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>55-64</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Occupation/ Major Activity</th>
<th>Professional/Management</th>
<th>Service/Retail</th>
<th>Trades/Technical</th>
<th>Homemaker</th>
<th>Retired</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8</td>
<td>5</td>
<td>2</td>
<td>7</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length of Residence</th>
<th>Less than one year 3</th>
<th>One to three years 5</th>
<th>Three to five years 10</th>
<th>Five to ten years 5</th>
<th>Over ten years 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Tenure</td>
<td>Renter 8</td>
<td>Owner 20</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Living Arrangement           | Live alone 8         | Share accommodation 20 |
area. Three residents, however, do not view their daily lives in Ambleside in a positive light. As a result of this, their feelings toward Ambleside as a place to live are less positive or affectionate than those of other residents. These three residents aside, the considerable length of residence of many of the interviewees in the neighbourhood is echoed in their elaborate descriptions of their daily lives, allied with the positive recounting of their past experiences there. As a prelude to the discussion of local resident experiences and daily lives, a review of the reasons behind their move to the local area, once again provides an introduction.

The factors residents identified as significant in their decision to move to Ambleside reflect the diversity of their daily lives. The attractions of the neighbourhood that prompted residents to move there in the first place fit into the same three broad headings previously identified for resident moves to the Commercial Drive and False Creek areas: environmental, social and functional or instrumental. The specific emphasis on each, however, varies in comparison to those residents expressed in relation to Commercial Drive and False Creek.

Environmental factors were the most important in residents' individual decisions to move to Ambleside. Thus, residents emphasized the considerable attraction of the neighbourhood's "picturesque setting", "beautiful location" and "small village" character. In addition, the neighbourhood's functional or instrumental traits which include the "ocean and beach", the "waterfront parks and walks" and the "local stores and businesses" were also important. In combination, these two sets of factors influenced the decision of most residents to move there, regardless of their place of residence or length of time in the area.

A smaller group of residents identified social or family factors as important in their decision to move to Ambleside. Edith, for example, a long-time resident, moved to Ambleside in response to the poor health of her aged mother who
already lived there. Similarly, two other women moved there after their respective marriages to husbands who already owned homes on the north shore. An additional resident, a single mother with a young child, moved to the area to live with her relatives after the break-up of her marriage. Finally, two residents, both in their late thirties, "were born and grew up" in Ambleside and chose to stay on in the area after leaving home.

While the reasons behind resident moves to Ambleside varied, so did the time period in which they moved there. For long-time residents, their initial decision to move to Ambleside, or to remain there, had been made many years previously, and as a result, the Ambleside to which they originally moved had changed considerably since they first lived there. They commonly recall the Ambleside of twenty-five to fifty years ago, as a "village by the sea", a "small quiet village" with a "cottagey feel" and a "rural, relaxed atmosphere". By comparison, the Ambleside of today has, for some at least, lost many of these earlier characteristics:

The place has changed . . . the developers don't really care what residents want.

They build what they can get away with . . . It's a lot busier and more crowded now; not like it was.

In addition to changes in the built environment, long-time residents also notice parallel changes in the social structure of the neighbourhood. The Ambleside of a quarter of a century ago, characterized by an eclectic mix of residents with varied lifestyles, and from different age groups, has been replaced by an upper middle class, mid-life, wealthier population with a more homogeneous set of lifestyles and housing preferences: "Our first neighbours were seniors,
newlyweds, well-to-do and not so well-to-do... It seems now that only the very well-off can afford to live here."

As an extension of resident discussions of why they chose to move to Ambleside, their subsequent descriptions of what makes a place a "good place to live" contain many of the same or similar viewpoints. Thus, for individual residents a "good place to live" is characterized, among things, by "a picturesque scenic location", "a lot of green areas and trees", a "country in the city feel", "good access to shops and work", a "safe, quiet environment", a "reasonable driving distance from major centres" and a "stable neighbourhood".

Almost inevitably, resident descriptions of what makes a place a "good place to live" reflect their own specific residential needs. Thus, for older and retired residents the close proximity of local stores and businesses is a definite asset, especially for those residents who either don't drive or who no longer own a car, as is a "quiet residential character". Young mothers and homemakers emphasize the "safety and stability" of the neighbourhood, one small part of their need to create a "safe and secure" environment for their children. In addition, the local availability of parks and schools is also important. For upper middle income residents a "good place to live" is also one that is both stable and secure, although the close proximity to "work and job markets", the availability and accessibility of "quality recreational resources" and "good schools" are also important.

For almost all the residents an "attractive physical environment", embodied both in the overall site and situation of the community, are important features of a "good place to live". Similarly, the desire for a "quiet residential" environment is also consistent, and is considered indicative of a "suburban" or "residential" setting such as Ambleside.

Resident descriptions of Ambleside in 'general terms' echo the factors that
influenced their decision to move there in the first place, although they also include both positive and critical comments. In positive terms, residents view Ambleside as "respectable", "picturesque", "stable", "scenic", "a beautiful place to live" and "a quiet residential area". Brendan, one long-time resident, sums it up as follows: "It's got a country feel to it . . . everything is close by . . . It's a beautiful place to live . . . so picturesque."

A small group of residents, however, are more critical of the neighbourhood. Six residents consider recent changes to have eroded the "original character" or flavour of the neighbourhood itself, and resulted in the loss of its "rural", or "quiet neighbourhood" charm. In the words of Daphne: "It's changed . . . not quite a concrete jungle yet, but it's getting there . . . The neighbourhood's been spoilt . . . It's becoming too grey and anonymous."

As an extension of general opinions, residents' individual likes and dislikes about living in Ambleside reflect many of the same views and sentiments. Residents' likes, thus, include the "picturesque location", the "proximity to the ocean, and mountains and park", the "small community spirit and feel" and the "dramatic views and vistas". The likes of individual residents are often very personal, for example, "the beautiful mature chestnut trees that line Seventeenth Street", "the privacy and sanctity of my garden", and "the friendliness of my neighbours". Through their repeated emphasis, albeit with minor variations on the part of individual residents, however, these features of the neighbourhood are virtually iconographic for Ambleside.

Although fewer, residents' dislikes centre on major changes in the local built environment, as well as the associated influx of "new" residents, and the increased tempo of daily life across the neighbourhood. These dislikes commonly relate to new development projects in the area which, according to some residents, detract from its previous character or ambience:
I don’t care for a lot of the new high-rises . . . they ruin the street by building them.

There’s too many new buildings . . . they don’t really fit in . . . They block our view and make the place noisier.

Along with these physical changes to local streetscapes, residents also dislike what they consider to be the recent influx of new residents, and the associated increased pace of daily life:

The traffic on the streets got a lot worse . . . The street is really busy now . . . It’s just not the same.

A lot of new residents just want to move here and knock down the older homes . . . They don’t try to fit into the area . . . Some of the new houses are huge.

Three residents cite the high cost of rented accommodation as a further problem. Indeed, each of them have recently experienced "considerable" rent increases. Faced with the low vacancy rates and the high cost of homes, however, they consider themselves to have "no chance of ever buying a home".

Overall, the majority of residents are satisfied with Ambleside as a place to live, and express this is different ways: "I couldn’t imagine myself living anywhere else", "I wouldn’t want to live anywhere else", and "I’m very happy living here". Residents' level of satisfaction also relates, at least in part, to their own social and economic situation as much as their physical place of residence. Thus, for residents satisfied with their daily lives and their 'lot in life', a general satisfaction also extends to Ambleside itself as a place to live.

The small number of residents dissatisfied with Ambleside as a place to
live, relate this, among other things, to ongoing changes in the physical landscape, particularly the "construction of new high-rises", as well as the high costs of local accommodations. Residents personally affected by changes in local housing markets, be it rising rent costs, or lost views and increased traffic flows, commonly extend their experiences to the community as a whole, and describe those two 'problems' as concerns across the whole neighbourhood.

In addition to physical changes to the built environment, the dissatisfaction of other residents relates as much to negative changes in their own personal fortunes as it does to the characteristics of Ambleside. Thus, for Tina, a young mother, recently "forced" to move to the north shore after the break up of her marriage - life in Ambleside is a reminder of her change in fortune. As a result of this, as well as the "difficulties" of living in her parents' house again, she is critical of Ambleside, and compares it unfavourably with her former home in South Vancouver.

When asked if they "really belonged" in Ambleside, a large number of residents said that they did, while a much smaller group felt that they did not. For residents who "belong", Ambleside is a "familiar place", both in physical and social terms, somewhere they "feel at home", and a place to which they are emotionally and physically attached: "I couldn't possibly move now... I have all my bits and pieces here... the yard's beautiful in the summer... I know all my neighbours."

Long-time residents, as well as those who grew up in the area consider Ambleside home - a place they feel "at ease", and a place that they "know well". For many of these residents Ambleside is also where they spend the largest portion of their time and their energies. Their homes, gardens and the streets on which they live, are all familiar spaces, and their family and friends are often close by. As one resident puts it: "Ambleside has everything I want".
Conversely, both the three residents who do not feel that they belong, and the five residents uncertain as to their commitment to Ambleside, see the neighbourhood in different terms. For these residents, Ambleside does not meet their daily needs, is not familiar, and further is not even what they expected it to be. Thus, for Edith and Tina, Ambleside is where they both, for differing reasons, are "forced" to live. Tina finds the "conservative" nature of the north shore, and its residents, "stifling" and not what she is used to. Similarly, Edith finds the "high cost of living", "steady traffic noise" and "lack of contact with her old friends" all "difficult to cope with".

6.5.3 Residents' Soundscapes

a) The Nature of Residents' Soundscapes

The soundscapes of Ambleside residents are diverse in both content and structure. Broad groupings of residents' soundscapes are discernible, however, based on the nature of residents' responses (Table 15). The majority of residents consider Ambleside as "generally quiet", and their local soundscapes as "not too bad". The most common sounds these residents hear are those of traffic from both Marine Drive, and the major arterial roads that run north and south to the higher elevations. For about half of the local residents interviewed, the number of sounds they are aware of is small. In describing their local soundscapes their major interest is with either the presence or absence of local traffic sounds. The word sound is commonly replaced by that of "noise", with the major "offenders" local traffic, and to a lesser extent, the buses that pass through Ambleside on a regular basis. The soundscapes of these residents retain a superficial character, with most sounds part of a background ambience to which they often pay little attention, and over which they consider themselves to have little control. The
<table>
<thead>
<tr>
<th>General Soundscape Characteristics</th>
<th>Specific Soundscape Features</th>
<th>Dominant Sense of Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Weak Definition</td>
<td>Few sounds actively listened out for.</td>
<td>Ambleside as a scenic place; small community feel; physically distinct from Vancouver</td>
</tr>
<tr>
<td></td>
<td>Little reported interest in sounds</td>
<td></td>
</tr>
<tr>
<td>2. Limited, focus on noise</td>
<td>Emphasis on traffic and construction noise.</td>
<td>Functional sense of place; Residential focus on Ambleside</td>
</tr>
<tr>
<td></td>
<td>Stated preference for peace and quiet.</td>
<td></td>
</tr>
<tr>
<td>3. Vivid, detailed</td>
<td>Actively listen for particular sounds: neighbours, birds, children, Royal Hudson</td>
<td>Ambleside forms a centre daily routines; strong attach to the local area; nostalgia for Ambleside of the past</td>
</tr>
</tbody>
</table>
sounds that get their attention are those they consider inappropriate or a "nuisance"; for example, "noisy traffic" and construction activity. They express their ambivalence to local sounds through phrases such as, "You don't expect noises like that here", or "it's not right in residential areas". Both are rooted in a deeper dissonance between the local sounds that they expect to hear, and those that they do.

While the acoustic experiences of individual residents differ, their general focus is on traffic sounds which 'invade' their otherwise "quiet" streets. Valerie, whose soundscape retains this general character, considers the majority of local sounds she hears merely part of the local scene, and provides little detail in her descriptions of them. The sounds she hears most often include the "noise of cars and buses". Valerie, who is retired, and has lived in the area for over thirty years, views the "many recent changes" that she's noticed in Ambleside in a negative light. Indeed, she recalls the smaller and more intimate Ambleside of the past with nostalgia and a certain sadness.

For a second smaller group of residents, the acoustic dimension of their daily lives is again only weakly defined. Their responses to questions on the range and diversity of sounds that they hear are hesitant or non-committal, with few strong thoughts or opinions. For the residents whose soundscapes fall in this broad category, their view of Ambleside is bound up in its picturesque physical location, and expressed primarily in visual terms: "beautiful views", "scenic location" and "very pretty place".

This focus on the visual dimension of the neighbourhood contributes to a neglect of local sounds. The interviews characterized by this focus on the visual elements of the neighbourhood were frequently preceded by an earlier discussion on the study of sound itself. Several of the residents whose soundscapes retain this weak definition challenged sound as a strange topic of
study, especially in a place like Ambleside where there is "not much noise at all". The acoustic experiences of the residents whose soundscapes fall within this general category of apathy (or perhaps habituation) vary, but may be summed up by the comments and responses of Reg who is in his mid fifties, and lives with his wife in a sixth floor apartment that looks out over English Bay. He describes his local soundscape as "peaceful and quiet" - with "few noises to speak of". The key features of local life for Reg and his wife are the quiet, adult-oriented nature of their apartment building, the close proximity of their recently married daughter who lives in North Vancouver, and the "beautiful view" from their apartment. Reg views apartment living on the north shore as a definite break from the busy schedule and demands of owning a house in the Vancouver area, from where they moved four years previously. Indeed, at a fundamental level, Reg remains isolated or separated from the local acoustic worlds below - a situation which "suits [him] fine."

The final group of residents, about one third of those interviewed, describe the sounds of their local street and community vividly and in detail. Local sounds provide these residents with information about events and activities, and are further frequently imbued with meaning and sentiment. The soundscape of Jane best represents the experiences of these residents. Jane has lived in Ambleside for over ten years. She owns a single-family dwelling located two blocks north of the intersection of Marine Drive and Nineteenth Street, where she lives with her husband. She spends the biggest part of her day in and around the Ambleside area, and regularly takes walks around the local parks and along the surrounding residential streets. Jane finds the middle-distance rumble of traffic from Marine Drive a minor nuisance, which has, unfortunately, become steadily louder over the years. This unwelcome sound is readily compensated for, however, by the "delightful" sound of birds singing which she hears at home.
in her yard, and on the local streets close by. The more dramatic "swirling and rushing sound" of wind in the trees adds further to the character of the neighbourhood for Jane, while whistles from the Royal Hudson during the summer months, fog horns during the fall and boat whistles all year round form local sound marks that echo the historical and coastal character of Ambleside.

As with the previously described Commercial Drive and False Creek resident soundscapes, these broad soundscape groupings represent at best abbreviations of the complex and diverse nature of residents' acoustic experiences. The following summaries of the different sounds residents hear, as well as their responses to them, thus, provide the basis for a more detailed review of the individual character of their soundscapes.

b) Types of Sounds

i) Traffic sounds

Traffic sounds, as in the Commercial Drive and False Creek areas, form one of the major components of residents' soundscapes. All the residents hear traffic sounds, most on a regular basis, although the nature and range of the sounds they hear differs. At one extreme, twelve residents find traffic sounds a common part of their daily soundscapes, and one that has "increased considerably within recent years". At the other, seven residents only infrequently hear traffic sounds, and consider them minor elements of their local soundscapes. Between these two extremes, nine residents consider traffic sounds a consistent, if not overpowering, element of their local soundscapes, albeit sounds they hear regularly throughout the day.

These residents who consider traffic sounds dominant components of their local soundscapes, associate these "noises" with "heavy" or steady traffic flows on either their own street or one close by. Residents commonly find these
sounds a nuisance:

There's a lot of cars since we're right on Marine Drive . . . Sometimes it seems as though it's constant zoom, zoom.

I hear traffic all too frequently . . . They've just widened the road here . . . and now it's even worse.

The amount of traffic noise we get . . . I'm not impressed . . . In fact I'm quite angry.

These residents also consider the level of traffic noise to have worsened over the last few years. Eight relate these changes to the continued development and growth of West Vancouver, as well as the associated influx of new residents: "When I first moved here there were much fewer houses or cars . . . Now it's so busy . . . it's changed a lot."

For the most part, residents are resigned to the dominant presence of traffic noise - although there is some anger that these noises invade their homes and local streets. Six residents regard the increased intensity and density of local traffic sounds ("noise") a violation of the area's earlier "peaceful charm" and residential sanctity, both features of the area they had previously enjoyed: "It's changed . . . It never used to be like this . . . The road's so much busier now . . . I don't know where it will end."

One resident has completed minor physical renovations to his home to counter traffic noise, renovations which other residents in the same building have also done before him: "Before we bought it (a sixth floor condominium) no one told us how busy Fifteenth Street was . . . We since put up storm windows to keep the noise out . . . A number of other residents have done the same."

More typically, residents resign themselves to traffic noise, although three have complained to the municipality about traffic noise, albeit to"little effect".
Residents' criticisms of traffic noise reflect their broader view of Ambleside as a "quiet, residential area". Douglas, for example, a long-time resident, who recently sold his original home in Ambleside and now lives in a smaller high-rise condominium, finds the traffic noises he now hears inappropriate for a community like Ambleside: "This (traffic noise) is not the sort of thing you expect in West Vancouver . . . The city maybe, but not over here."

While most residents who consider traffic noise the dominant element of their local soundscapes relate these sounds to traffic flows in and around their own home or street, five residents also associate the noise with heavier traffic flows on Marine Drive, as well as those across Ambleside as a whole. For these residents, Marine Drive and the blocks to the north and south of it, have literally been "taken over" and "changed for the worse" by the "constant noise of cars".

For the second group of residents, who consider traffic sounds a common component of their local soundscapes, if not a dominating one, the traffic sounds they hear are from vehicles on their local streets, as well as the rumble of more distant traffic flows. Some of the traffic sounds these residents hear are from regular local events or activities which they associate with particular sounds. Thus, individual residents regularly hear the distinctive sounds of the "big cars from the funeral home down the block", the sound of "teenagers out joyriding" and the sound of the "neighbour's noisy old vehicle":

The street has very little through traffic, so it's generally quiet . . . The only time it's really busy is when there's a funeral on.

Spoiled brats on a Friday evening ruining their mother and father's tires . . . It's frustrating.

The guy across the way has an old Volkswagon beetle . . . It's as noisy as hell . . . I think the whole street must hear him come and go.
Residents whose local soundscapes include few traffic sounds associate traffic noise with other neighbourhood spaces physically removed from their own homes or streets, and even with those of other neighbourhoods they visit:

My own street is very quiet - it's a cul-de-sac . . . Seventeenth Street is much busier and so is Marine . . . It's quiet here . . . very quiet.

We're well away from the main road here . . . the traffic doesn't bother us at all . . . I have friends who live in Park Royal Towers. It's awful there.

One important characteristic of this local "peace and quiet" is thus the relative absence of local traffic noise. Indeed, traffic sounds, for these residents, are not "local" sounds, but rather more "distant" or background sounds that unfold away from their local area. In part, the high-rise living of three of these residents contributes to their shelter from local traffic sounds, as does the ocean aspect of the homes of three further residents, and the cul-de-sac location of the homes of two others.

Almost all the residents refer to traffic sounds as "noise", and their reactions to them are either disapproving or critical. Those residents who are not car-owners, or in the case of two elderly women never learned to drive, are the most critical.

Although all residents hear traffic sounds, and many on a regular basis, few are able to identify individual traffic sounds or to describe the sounds they hear in detail. Most traffic sounds residents hear remain anonymous, and are not associated with either specific events or activities, an acoustic experience they share with Commercial Drive and False Creek residents. Only three residents, for example, regularly hear the roar of the local Blue Buses as they head up and down Seventeenth Street, all of whom live close to the street itself. Two
Bellevue Avenue residents, do find the sound of speeding motorists a specific
nuisance, although the identity of the vehicles or drivers themselves remained
unknown. For Molly the sound of cars speeding by not only disturbs an
otherwise peaceful streetscape, but also reawakens her fear that one day one of
her own two young children will wander out on to the street from their small
front yard: "They roar by here . . . Someday, someone will be killed . . . I'm
terrified to let the kids out of my sight." These isolated comments aside, traffic
noise, although a common element of residents' soundscapes, is neither wanted
nor, for the most part, listened to on an active or regular basis.

ii) Non-vehicle transportation sounds

In addition to traffic sounds residents also hear a variety of other
transportation sounds. These additional transportation sounds include those of
the train which twenty-seven residents hear, seaplanes twenty-five hear and
boats nineteen hear. By comparison to traffic sounds, residents hear these
additional transportation sounds on a much less frequent basis, although as in
the Commercial Drive and False Creek areas they commonly pay much greater
attention to them and describe them in more detail.

The twenty-seven residents who hear the train rumbling along its shoreline
tracks have varied experiences of it, and describe it in different ways. Residents
who live close to the rail lines, for example, find the high intensity roar from the
trains as they pass by their homes loud and occasionally disturbing, sounds
which literally "rattle their windows and walls". By contrast, those who live
further away from the rail lines, describe the rumble of the train as more distant,
and refer to it in more positive terms.

For residents who live close to the railway, the trains are the loudest sounds
they hear. The high intensity rumble of the train as it passes slowly by
temporarily dominates their local soundscapes, and the descriptions residents offer of the sounds they hear reflect this: "powerful", "disturbing", "bothersome", "stifling" and "occasionally frightening" or "startling". Although the trains pass through Ambleside only two or three times a day, the close proximity of the rail line to the homes of residents who live on the south side of Bellevue Avenue results in their being exposed to sound levels in excess of 85 dB(A) or 95 dB(C), as measured at the edge of their property lines.

The roar of the train is particularly disruptive during the late evening, especially for residents whose low-rise condominiums lie just to the north of the rail line separated from it by only one hedgerow. Indeed, Arnold, one of these condominium residents, is regularly awakened by the train as it passes by late in the evening: "The train is a real problem . . . It wakes me up when it goes by . . . not every night, but enough." By contrast, residents who live further from the rail line, for example, to the north of Marine Drive, have more positive impressions of train sounds and describe them as "exciting", "interesting", "evocative" and "atmospheric". As a result of the greater distance of their homes from the rail lines, the high intensity roar of the engine is reduced to a more distant rumble that residents find much less invasive. For these residents the rumble of the train forms a distinctive component of their local soundscapes, and one with some romantic qualities that reminds several of the older residents of their early years in Ambleside: "The train's been here as long as I have . . . It's one of the few sounds that's still here from the early days."

In addition to their descriptions of the regular freight trains that pass through Ambleside all year round, residents who live to the north of Marine Drive also hear the distinctive sounds of one particular train - The Royal Hudson. A restored steam train, The Royal Hudson was originally used to transport the then King and Queen during their visit to West Vancouver in 1939.
Seventeen residents hear the distinctive sounds of The Royal Hudson, although given its seasonal schedule, it forms part of their summer soundscapes alone.

Residents who hear The Royal Hudson talk of its characteristic sounds with warmth and affection. The puffing from its steam engine, as well as the distinctive blast of its whistle, are two particular sounds which stand out in the minds of residents, and ones which one long-time resident also notices as the signal for a chain reaction of dogs barking throughout the neighbourhood. Ten residents consider the regular summer trips of The Royal Hudson an important part of the local community. It is, thus, with some pride, or sense of community, that residents announce that the train can indeed clearly "be heard" on "their street" or within "their yard" or "home". The enthusiasm of local residents in describing the distinctive and "romantic" sounds of this particular train differs significantly from their resigned or begrudging acceptance of traffic sounds.

As a complement to the "slow-moving" sound of the regular freight train service, as well as that of the seasonal of The Royal Hudson, twenty-five residents hear the "busy" sound of seaplanes overhead. Despite the more frequent sound of seaplanes, most residents describe them with much greater brevity than they do train sounds. The majority of residents have only brief or somewhat non-committal views on seaplane flights, and either simply accept or ignore them. Indeed, the comments of Stuart sum up the responses of many local residents: "Now and again I hear them . . . They don't bother me . . . A lot of the time I see them and don't even hear them."

In contrast to the acoustic impressions most residents have of seaplanes, two residents new to the community 'view' them differently. Angela and Geraldine who both moved to Ambleside in the last six months from Langley and Montreal respectively, find the "buzz" of the seaplanes "intriguing". For Angela, it goes even further: "The seaplanes I like . . . They have a sort of
romance attached to them . . . The thought of a plane landing and taking off from water . . . it's neat."

In addition to the sound of the seaplanes, eighteen residents also hear the more occasional sounds of helicopters over the inlet and Stanley Park. Residents are critical of the "noisy clatter" of the helicopters, especially those whose homes look out over the inlet and bay. Indeed, residents offer little positive comments on the helicopter flights at all, and are particularly critical of the ones they associate with the summertime flights of tourists over British Properties.

The final transportation sounds residents hear are those of boats from the inlet. The sixteen residents who hear boats consider them, for the most part, to be either distant or "far-off" sounds. Only five residents, for example, consider them "local", immediate or "close by", two of whom live on the waterfront and three of whom spend much of their time in and around the waterfront area. The boat sounds these five residents hear most often are those from "small pleasure craft" which include the "occasional water-skier" and "speedboat". Residents whose homes face onto the waterfront find these sounds "annoying" or "monotonous", especially during summer evenings and on weekends when the inlet is "crowded with small pleasure craft".

The boat sounds most residents hear are from the much larger ocean-going vessels which sound their horns as they enter and leave the First Narrows. Residents' descriptions of these sounds are somewhat similar to those of the trains, which they also consider to come from "afar" or a distance: "stirring", "striking", "a bit mysterious" and "powerful". Eight associate these sounds with late afternoon or early evening periods, although these are also the times when the majority of residents are at home during the week day, and hence exposed to local sounds. Two residents find the horns symbolic of Vancouver itself, with its continued reliance upon the harbour as "one of its major industries", as well as
iii) People-sounds

Most residents hear few people-sounds, and consider them "limited" or "infrequent" elements of their local soundscapes. As a reflection of this, their descriptions of these sounds are brief, and contrast with the rich array of people-sounds Commercial Drive residents hear. Some residents do not even associate people-sounds with either their local streets or Ambleside as a whole: "not where we live", "very rarely", "only occasionally" or "it's very quiet here". For many this absence of people-sounds, particularly those of teenagers or young adults, is an asset of the neighbourhood, while for others the lack of such sounds is symptomatic of changes in the community at a broader level.

The most common people-sounds residents hear include those of people talking or shouting which twenty-five residents hear and the sound of young children which fifteen hear. Three residents report hearing few if any people sounds as they go about their daily lives.

The majority of residents who hear people's voices consider them only occasional or infrequent components of their local acoustic worlds, and not sounds they hear on a regular basis. One exception to this is the soundscapes of two residents who live on the waterfront. Both of these residents regularly hear the voices of pedestrians and joggers as they pass by their homes in the early evening. These daily sounds are augmented on weekends and during summer evenings by the sound of beach parties and people playing football in John Lawson Park.

Five residents who live north of Marine Drive, and close to the major thoroughfares of Fifteenth and Seventeenth Streets, hear the periodic "weekend" or "Friday evening" sounds of teenagers. They associate these sounds with the
"local convenience store" which forms something of a "meeting place . . . and hang-out" for local teenagers, and "kids heading to the beach". Two retired residents consider these sounds as indicative of potential problems or trouble, while one elderly lady finds them "frightening" on occasion.

In addition to the sound of adult and teenage voices, fifteen residents hear the numerous sounds of children at play. Residents hear these sounds most in the two local parks, John Lawson and Ambleside, as well as the environs of Hollyburn Elementary School. Two residents who live on the eastern margins of the neighbourhood, for example, regularly hear the shouts and cries from Sunday morning soccer games in Ambleside Park. Similarly, the sounds of children on their way to and from school forms part of the local soundscapes of the two residents who live close to Hollyburn Elementary School. Both of the residents who hear children's voices from around the school are at home during the day, and one has children of her own.

Across Ambleside the place residents associate most with children's voices is John Lawson Park, with its small children's play area on its western edge. The twelve residents who associate John Lawson Park with children's voices, all visit the park on a regular basis. Six have young children themselves, whom they take to the park "regularly" or "two to three times a week during the spring and summer". Three others visit or pass by the park daily.

Residents' impressions of people-sounds reflect their individual experiences, as well as the physical characteristics of the sounds themselves. Any voices or shouts residents hear close to their homes, for example, are carefully 'sorted' to determine their source and potential consequences. The evening voices or shouts of teenagers which get the attention of some residents, and which they consider indicative of "someone up to no good", or in one extreme case a reflection of "kid's disrespect for the quiet residential character of
the community". By contrast, residents have more positive impressions of children’s voices. For two retired residents, the sounds of children "at play" have a mnemonic quality, which reminds them of the Ambleside of the past, "when it seemed that almost every couple on the block had young kids" - a feature they now consider lost, with the influx of "new residents" and the replacement of single-family homes by "high-rises designed for seniors or people without kids".

By comparison to the ubiquitous and pervasive presence of traffic sounds, people-sounds form a much smaller part of most residents' soundscapes. For some the relative absence of people-sounds, especially those of teenagers after dark, is a positive feature of the neighbourhood, while for others the loss of children’s voices reflects a change in the community. For the latter group of residents, the loss or reduction in people-sounds echoes the social changes taking place in Ambleside, as well as the construction of high-rises and condominiums, and the associated loss of single-family dwellings. Indeed, three residents, who have all lived in Ambleside for more than ten years, consider the loss of local people-sounds indicative of a similar decline in the neighbourhood’s "community spirit", "friendliness" and "neighbourliness".

iv) Local business sounds

Despite the presence of some two-hundred and fifty local stores and businesses in Ambleside, primarily arranged along Marine Drive, most residents hear few business sounds. The physical distance of many residents’ homes from the commercial core, as well as their high-rise nature, separates many of them from street-level business sounds on Marine Drive and its environs. Residents' views of Ambleside as primarily a residential area further influence their impressions of the business sounds they do hear, which are commonly disapproving or critical.
The business sounds residents do hear are once again shaped in large part by their place of residence in the neighbourhood, as well as the nature of their daily routines. The most common business sounds residents hear are those from construction activity which nine residents hear, all who live close to one or more of the numerous construction projects underway in the neighbourhood. Most are critical of construction sounds, and dislike their intensive and percussive nature, as well as the disruption of local routines that individual projects bring. Residents find the "long hours of banging . . . which even include weekends", the "constant drone of heavy equipment", the "early morning start of the noise" and the "frequent coming and going of heavy vehicles" annoying.

For some, the "continued problems" presented by construction sounds symbolize the larger structural changes taking place in the neighbourhood. These changes include the loss of older single-family dwellings and their replacement by either condominium and apartment dwellings, as well as new larger ("monster") homes. Alf, for example, considers the cacophony of building sounds he hears from across the street as not only a "disruption" of the local streetscape, but also a sign of the "inevitable" changes taking place in Ambleside: "Apartment blocks are spoiling the area . . . It's losing its character . . . The houses go and long-time residents are forced out." Other residents share this sentiment, and echo Alf's concerns about the volume and intensity of construction sounds, as well as the changing face and social profile of Ambleside.

In addition to construction sounds, residents also hear the roar of trucks making deliveries to local stores, the rumble of garbage trucks, and the associated banging of waste disposals from commercial and apartment properties, voices over the intercom system at the local garden centre on Marine Drive, and funeral procession cars from the Funeral Home. The residents who
hear these sounds each associate them with their local streets, and as such part of their local soundscapes. Overall residents find the noise from delivery vehicles and from the weekly round of garbage pick-ups the most disruptive. They hear both of these sounds on a regular basis, and as a result readily recognize them, considering them part of the weekly routine.

As a complement to these business sounds residents hear close to their homes, they are also aware of a second, but much smaller array of sounds, which they associate with the commercial sections of Marine Drive. These business sounds include voices and music from the local cafes and restaurants recently located by the Old Ferry Terminal building at the foot of Fourteenth Street, and hammering and banging from the various garages and gas stations on Marine Drive. Music and the voices of cafe patrons are a common part of early evening waterfront soundscapes during the summer months, when restaurant and cafe tables spill out onto Bellevue Avenue giving the area a "European atmosphere or feel".

With the exception of the cafe and garage sounds which six hear, most residents hear few business sounds. Most consider their homes removed from the commercial core, and part of a separate residential section of the community to the north of Marine Drive. For many residents the business sounds are further drowned out by the pervasive roar of traffic on Marine Drive. The high rise nature of many residents' homes also serves to isolate them from street-level and the smaller sounds heard there.

v) Natural Sounds

Natural sounds represent an important element of residents' soundscapes with the most common those of birds singing which twenty-six hear, the wind and the rain which twenty-one hear, the ocean which fifteen hear, barking dogs
which six hear, the sound of squirrels which four hear and the babbling of local creeks which four again hear.

The pervasive sounds of birds and bird song are the natural sounds residents hear most often. They associate these sounds not only with their own local streets, but also with other parts of the neighbourhood they visit on a regular basis, including the parks and waterfront. For many bird sounds are synonymous with the "quiet residential streets . . . you find in Ambleside", with their presence linked to the mature deciduous trees that line individual streets: "The large chestnut trees on it attract the birds . . . There are all sorts that come here." The two residents who do not hear bird sounds live in high rise apartment suites, well above street level and isolated from smaller local sounds. For both of these residents the mainstay of their local soundscapes is the near constant roar of local traffic, which drowns out or masks other smaller local sounds.

Residents' impressions of bird sounds reflect their own preferences and listening habits as much as they do the physical characteristics of the sounds themselves. Six residents, either retirees or homemakers, hear the distinctive calls of a number of birds which visit the area. Several regularly feed the birds, and enjoy listening to them. Daphne, for example, who lives in a high rise condominium, has a bird-feeder on her balcony, and is familiar with the varied habits of individual birds who regularly come to feed.

By contrast, most residents have only vague impressions of specific changes in the nature and frequency of bird sounds. For these residents bird sounds form ambient elements components of their local soundscapes, which although they consider positive or "desirable", they do not generally pay specific attention to.

In addition to the almost ubiquitous sound of the birds, most residents are also aware, to a greater or lesser extent, of the ambient west coast sounds of the wind and the rain which add to the distinctive character of their individual
soundscapes. Residents in all parts of Ambleside hear these sounds. Indeed, their impressions and awareness of them is much greater than those of either Commercial Drive or False Creek residents. Specifically, eight residents, hear the whistling and rushing of the wind around the numerous high rises dotted throughout the neighbourhood. Five others, who live north of Marine Drive, regularly hear the sound of trees swaying in the wind, sounds they associate with the numerous mature trees that line the residential streets, as well as the perimeters of Memorial Park. Five high rise residents, whose homes face the waterfront, notice the distinctive whistle of the wind blowing off the bay area which forms an ambient component of their local soundscapes. Two admit that they found the rushing of the wind "troubling" or "disturbing" when they first moved there, but now after an extended period of residence three and five years in the community consider it "par for the course".

Two further residents, who live north of Marine Drive, use the sound of wind in the trees as one indicator of an approaching storm. Daphne, for example, associates the increased swaying of the tall trees on Seventeenth Street with a pending change of weather: "When the trees start swaying we know we're in for something . . . and generally pretty soon".

In addition to bird and weather sounds residents also hear a small array of other natural sounds. Unlike the almost ubiquitous sound of birds and the weather, these sounds are confined to more limited areas, and as a result a much smaller number of residents hear them. Residents whose homes front directly onto the waterfront, for example, consider the "roll of surf" a basic component of their local soundscapes, and one that reaffirms the identity of Ambleside with its maritime location. Most find the rhythmic sounds of the ocean soothing, and are positive in their descriptions of them: "delightful", "peaceful", "restful" and "healing". For two, the ocean site of their homes is one of the specific reasons
they moved to Ambleside, with the acoustic 'seascape' an integral component of their home environments.

Residents who live away from the waterfront, to the north and south of Marine Drive, also describe the varied sounds of the ocean as part of their local soundscapes. For these residents, the rolling surf is not a sound they hear at home, but rather one they strongly associate with the waterfront and park areas. The sounds these residents hear along the waterfront also include the cry of seagulls and the sound of the wind "from off the inlet". At different times residents find the waterfront "peaceful", invigorating" and "blustery", depending on the local weather. It stands out, however, as one part of the neighbourhood that is always characterized by a diversity of sounds, sights and smells.

The babbling of local streams is a further water sound residents hear. The four residents who hear this all live close to one of the three streams that cuts down through the neighbourhood. As with the ocean and bird sounds, residents similarly describe these sounds in positive terms: "I find it relaxes me . . ." "It's really so nice . . . especially nowadays when all other people hear are cars." Two residents regularly notice fluctuations in the volume of water flow, particularly after periods of heavy rain, when the creeks flow "much faster" and carry "a lot more water".

Two final natural sounds residents hear are the smaller sounds of squirrels, and the intermittent barking of dogs. By comparison to the more ubiquitous sound of birds, residents associate both of these sounds with particular locations, and hear them on an infrequent rather than regular basis. Two residents find barking dogs occasionally "annoying", especially in the evenings, although both are comforted by the distance of the offending dog from their own homes: "I'm glad the dog is down the block and not next door . . . It barks a lot in the evening
I think it's inside all day." Two of the residents who hear dogs barking know the owner of the animal, while the other four are uncertain as to the owner or the location of the sound source itself. By comparison to the Commercial Drive area, where barking dogs are a common event, Ambleside residents hear only a few, a characteristic they share with False Creek residents.

Most residents consider natural sounds important elements of their local soundscapes. The majority are aware of one or more natural sounds - although their individual descriptions of these sounds differ. Residents who spend the majority of their day in and around the neighbourhood describe natural sounds in the most detail, and are also the most enthusiastic in their descriptions. The strong attachments of many residents to natural sounds reflects their broader view of the community in "quiet suburban" or "seaside village" terms. In keeping with this view of the community, natural sounds help, in part, to perpetuate the suburban or village character of the neighbourhood for many residents. Within the environs of Marine Drive, however, it is the absence of natural sounds that residents notice, with their limited presence masked by the density and volume of traffic sounds.

vi) Local sound signals

In addition to the broad array of individual sounds they hear, residents also notice a number of sound signals. Individual sound signals include the blaring sound of emergency vehicle sirens which twenty-six residents hear, the deep and haunting sound of coastal foghorns which twenty-one residents hear, the blast from boats' horns which sixteen hear, and the noon hour O Canada Horn which five hear. In addition to these electrical or mechanical sound signals, thirteen residents hear the clanging of the bell from the trains and one the chime from the bells of St. Christopher's Church located on the northern fringes of the
community.

As in Commercial Drive and False Creek, residents find the emergency vehicle sirens intrusive. The location of a fire hall in the residential heart of the neighbourhood, just to the east of the Municipal Hall, increases resident exposure to these piercing sounds. Residents who live close to the firehall report a "steady stream" of emergency vehicles with their "sirens blaring" which form a "confounded nuisance" and a "damn annoyance". Alf, who lives one and half blocks south of the fire hall, estimates that he hears sirens hourly: "one an hour every hour". He further opines that the sirens are switched on for the first time outside his house, with the effects of this sudden "blast of noise startling", with a "first loud blast with no warning".

Other residents who also live close to the fire hall express similar opinions, although their perceptions of the frequency of sirens varies. Residents who spend the majority of their days in and around their homes, or who live close to the fire hall, estimate the frequency of sirens to be higher than residents who work outside of the neighbourhood, or live away from the fire hall. Rodney, who lives close to the fire hall, for example, but who works in Vancouver, considers the sirens occasionally "disturbing" and a "nuisance", but estimates their frequency as "about once or twice a day". Such an estimate varies considerably from that given by Alf and reflects, in part, the individual nature of residents' soundscapes.

Residents whose homes front or face onto Marine Drive, similarly describe emergency vehicle sirens as common in their local soundscapes, although their descriptions of them differ from residents who live close to the fire hall. Those whose homes front onto Marine Drive commonly regard the street itself as the source of the problem (siren noise), rather than the emergency vehicles that pass along it, or the fire hall. Emergency vehicle sirens thus become one of the many
"noises" from the Drive, which disturb and irritate them:

Marine Drive's the major thoroughfare for everything . . . including emergency vehicles.

It's (Marine Drive) got busier over the years . . . the sirens are just part of it.

While Marine Drive residents consider sirens "common" sound events, the greater physical distance between them and the sound source reduces their impact. For these residents, sirens are "annoying", "disturbing" or even "attention-getting", rather than physically "shocking" or "startling" as they are for the residents whose homes lie close to the fire hall.

Residents who live south of Marine Drive close to the waterfront, offer a third perspective on emergency vehicle sirens. These residents, exposed to the varied soundscapes of the inlet, hear few emergency vehicle sirens, an absence that pleases them: "hardly ever", "not here on the front", "we don't get those kinds of sounds here very often". The absence of sirens is further equated with the larger absence of traffic noise, thus distinguishing the more "relaxed" and "peaceful" soundscape of the waterfront from the "crowded" or "hectic" environs of Marine Drive.

In addition to the wail of sirens, residents also hear the sonorous calls of foghorns and ships' horns or whistles. Twenty-one residents hear the distant call of fog horns, many of whom attach feelings and sentiments to their lonely call, and describe them as "mournful", "moody", and "eerie". For others, foghorns are "reassuring" and "comforting" and further retain a mnemonic quality. Indeed, four residents are often reminded of their youth or early life in the community by the call of the horns, while for others the horns are a symbol for Ambleside itself.
Most residents hear the horn from the Port Atkinson Lighthouse, although six residents are uncertain as to the origin of the sounds they hear. Residents generally associate the foghorns with evening periods, particularly in the fall and winter when "it is often foggy" or the "fog season sets in". Several of the residents who talk affectionately about the foghorns grew up on the north shore and have spent "the majority of their lives" there. For these residents particularly, the call of the foghorns stands out as an acoustic reminder or symbol of both Ambleside's and Vancouver's historical links to the sea: "It's part of our past . . . the foghorn's a reminder of our roots almost."

As a complement to the mournful sound of the foghorns, a smaller number of residents hear the daily blast of ships' horns as they pass through the First Narrows. Although fewer residents hear these, there are some similarities between their impressions of them and those of the fog horns. For some the horns are "powerful", "stirring" and "somewhat romantic", while others have a more matter-of-fact impression of them: "all right", "okay" and "sort of interesting". The sharp blasts of the horns occur during the afternoon when many residents are at work and hence away from their homes. As a result, ships' horns figure less commonly in residents' soundscapes than the evening fog horns.

While the invasive sound of emergency vehicle sirens, and the more evocative sounds of the fog horns and ships' horns form the major sound signals residents hear, a smaller number of residents hear the noon hour blast of the O Canada horn, and the different sounds of two bells: the clanging bell on the freight train as it winds its way along the shoreline, and the chiming bells from St. Christopher's church in upper Ambleside, at Inglewood and Eleventh.

Five residents, all of whom are at home during the day, faintly hear the O Canada Horn. Residents hear the horn on an infrequent basis, and hence do not
regard it as a useful indicator of the noon hour. Rather, it serves as an occasional
sound signal and not one they listen out for on a regular or consistent basis. Two
residents who hear the clanging train bells strongly associate them with the
waterfront area - particularly the environs of the Old Ferry Terminal building at
the foot of Fourteenth Street Both spend much of their leisure time in this area,
and regularly listen out for the approaching train during the late afternoon and
early evening period: "It's generally the bell I hear first . . . then the train . . . The
bell tells me it's coming."

Other residents who hear the train bell live on the waterfront close to the
rail line. For these residents the bell is a regular 'local' sound event, and one they
hear on a daily basis when they are at home. On the basis of this local
association, the sound of the train bell contrasts with the more distant sound of
the O Canada Horn which remains more closely associated with Vancouver
itself.

The final sound signal residents hear is that of church bells. One resident
hears these, Gerald, a retired long-time resident who lives north of Marine Drive
on the eastern margins of the neighbourhood. He hears the bells from St.
Christopher's Church, a sound that he has heard for "about as long as" he can
remember. He finds it "much harder to hear the bells these days" on account of
"noisier traffic". The Sunday morning peal of the bells is now "quite faint" and
"not what it used to be". For Gerald the fading of the bells is a "shame really",
which he relates pragmatically to local changes, particularly the increase in
traffic ("there's a lot more cars now"), as well as the continued physical growth
of the community ("too many houses up here . . . and big ones").

C) Residents' Synopsis of Local Area Sounds

Residents descriptions of the sounds that characterize Ambleside the most,
include mention of a variety of different sounds that echo the diversity of the many local acoustic worlds in the neighbourhood. Despite their idiosyncracies, however, residents' summaries retain some common elements that relate both to the form and function of Ambleside itself, as well as similarities in the location of residents' homes and the nature of their daily routines.

For seven residents, Ambleside's most common sounds are those which contribute to the "peace and quiet", "solitude" or "tranquility" of the area, and which differentiates it from other neighbourhoods. Only a small number of residents have this particular acoustic impression of Ambleside, however, and they all live either on the waterfront or on one of the quiet residential streets north of Marine Drive, away from the busy north-south arterial or collector streets. The soundscapes of these residents are characterized by a rich array of natural sounds coupled with a relative absence of either traffic or construction noise. Residents consider this "peace and quiet" one of the neighbourhood's most desirable features, and take pains to point out "how quiet", "private" and "peaceful" their local street is.

Some consider this peace and quiet to extend to Ambleside as a whole, although they do point out the heavy traffic flows on Marine Drive as a source of acoustic 'blight' across the local area. Marine Drive aside, Ambleside's "quiet", "peaceful" and "natural" acoustic environment serves both as a continued attraction for these residents, as well as one of the major reasons they initially moved there. Brendan, for example, whose single-family home fronts onto the bay, considers Ambleside's peace and tranquillity one of its most endearing features, although he recognizes at the same time that increasingly local traffic flows threaten this:

"It's the peace and quiet that stands out . . . It's one of the reasons I moved here . . . It's got busier . . . but still hard to beat."
In contrast to this generally positive acoustic impression, eight residents find the local area characterized by the low frequency, repetitive and invasive sound of traffic (noise), the more infrequent piercing sound of sirens, and more recently the hammering and banging from local construction projects. These residents are much more critical of the character and tempo of their local acoustic environments. They find them alienating, and describe individual sounds in critical or negative terms: "the noise (traffic) can get to you after a while . . . especially the sirens"; "it's a lot busier now . . . the traffic's ruined the neighbourhood". For these residents it is the heavy local traffic flows that disturb them the most, and result in feelings of frustration and anger. In part, this frustration relates to a contrast between the Ambleside they knew before or expected, characterized by quiet streets and a village character, and the Ambleside in which they now live, full of heavy local traffic flows, sirens and construction noise.

Between these two contrasting acoustic experiences of local life, the majority of residents describe a more balanced array of local sounds which include natural sounds, those of people going about their daily lives, traffic and other transportation sounds ("birds singing", "wind in the trees", "children playing" "cars on Fifteenth Street" and "the train rumbling by"). Within this eclectic mix, the dominant sounds are those from the local events or interactions which unfold either close to residents' homes or in the local spaces they visit on a regular basis. These small scale local acoustic environments result in a diverse array of resident soundscapes - all of which reflect the individual nature of residents' interactions with the world around them.

In their summaries of the five sounds they hear most often, residents draw on many of the same sounds they associate with the area as a whole. Thus, residents who consider their local area "peaceful and quiet", describe the natural
sounds of different birds, as well as those of the ocean and the wind, pedestrians and visitors to the park and beach areas. Two residents include the pervasive "noise" as one which invades their local "peace and quiet", and spills over from the "park parking lot" and the local "medical centre". The inclusion of traffic sounds in their local soundscapes by several waterfront residents is further testimony to the widespread presence of traffic noise across the neighbourhood.

Residents whose acoustic impressions of Ambleside are dominated by heavy traffic flows focus on traffic "noise" as the most common sound they hear. These residents also include some natural sounds in their local soundscapes, however, especially those of birds. Despite these natural sounds, traffic "noise" remains the most frequent sound they hear, although residents make little attempt to relate these sounds to either specific events or activities, considering them part of an all-encompassing whole from which there is little escape.

For the majority of residents, the most common sounds they hear, thus, reflect the diversity of their individual local worlds, as well as the idiosyncracies of their daily routines and actions. Residents hear a combination of traffic, natural and local activity sounds, with business and to a lesser extent people-sounds more isolated components of their local soundscapes. People-sounds figure more prominently in the soundscapes of residents who live close to the waterfront parks, while business sounds are more commonly heard by residents who live by local construction sites.

The most distinctive or noticeable sounds residents hear range from the natural sound of "waves breaking against the seawall" to the modern wail of emergency vehicle sirens. Residents associate these sounds with particular events or activities that take place on either their local streets or close to their homes. Thus, for Alf the piercing blast of emergency vehicle sirens is most
noticeable, while for Emily, it is the rushing and bubbling of Lawson Creek in its artificially confined channel by the Legion Building as it "tumbles down through the neighbourhood to reach the sea".

As part of a shared acoustic experience, four residents consider the whistle or steam engine of The Royal Hudson as the most distinctive local sound event. For these residents the Royal Hudson is a symbol of nostalgia and a longing for the past. In the words of Jane: "It's (The Royal Hudson) wonderful . . . we all look forward to it starting in the summer . . . it's so exciting."

The current soundscapes of six long-time residents contrast vividly with past soundscapes. In their recall of the Ambleside of their recent, and not so recent memories, these residents cite the loss of a number of distinctive local sounds which have been smothered by increased local sound levels, or alternatively been lost from the local soundscape as a result of structural changes in the local area's form and function. For Arnold, one long-time resident of the West Vancouver area, the lost sounds include the distinctive blasts of the old ferry whistles, which faded from earshot with the end of the local ferry service "in the early 1950's" (The ferry actually stopped running in 1947). Similarly, for Byron, the distinctive sound of the old foghorns had also been lost; but in this case replaced by the modern, electronically operated and sounded ones: "They're not the same (the foghorns) . . . they've lost their individualness . . . and their feel I call it."

For other residents it is natural sounds, including those of birds and the ocean which they used to hear throughout the neighbourhood that are increasingly masked by the noises from increased local traffic flows. Children's voices have also disappeared from the soundscapes of two residents, gone with changes in the neighbourhood's demographic character, as well as the presumed closure of "at least one local school" (actually none have been closed although
their purposes have changed, for example, one local school has become a French immersion school): "They (children) used to play on the street all the while . . . It's not the same now . . . It's not safe with all the cars . . . A lot more cars."

In addition to the descriptions of local sounds they no longer hear, twenty residents also consider the neighbourhood to have "become noisier" since they have lived there. Long-time residents notice the most changes, describing them as "considerable", "dramatic" and "inevitable". As the neighbourhood changes, so too do its characteristic sounds. Arnold, one long time resident, shares the resignation of others residents when he describes the generally undesirable, but almost inevitable, acoustic by-products of the development and growth of Ambleside: "It's noisier now . . . there's more traffic, . . . more people and more everything . . . It's the same everywhere . . . although here it's not as bad." Even residents who have lived in the area for a short period of time are aware of some changes in the local soundscape, which they also consider to have become noisier. Several relate these changes to particular events or developments which have altered the form and function of their local streetscapes:

It's a lot worse since they widened the road here . . . even more traffic comes up here now.

The new shops and stores on Bellevue have made the place busier . . . It's noisier what with all the cars.

In contrast to the twenty residents who consider the area to have become noisier, six feel that it has stayed the same, while two are uncertain as to the nature of any changes that have occurred. Three of the residents who notice no changes in local sound levels live on the waterfront, and are, in part, sheltered from many of the changes in Ambleside. Significantly, no resident considers the
local acoustic environment to have "become quieter", a finding similar to that recorded in Commercial Drive and False Creek.

As a final comment on their local soundscapes, most residents have few suggestions on particular sounds they would like to see preserved or protected. Eleven residents do, however, consider the natural sounds they hear important elements of their local soundscapes, and hope that they will not be lost or fade from earshot as traffic noise increases and Ambleside continues to grow.

d) Residents' Responses to Sound Recordings

The sound recording most residents correctly identified was that of the train passing through the community. Twenty-seven residents knew, and were able to geographically place, the distinctive roar of the train along with its clanging bell. The one resident unable to do so recently moved to the area, and was unaware of the waterfront rail line and hence unsure of the train's daily route. The ability of residents to correctly identify and place the three other sounds varied, with twenty-five residents correctly identifying the sea plane, twelve children playing in the park, and nine the helicopters (Table 16).

Resident activity patterns, listening habits and daily routines all affected their ability to identify and correctly place sounds. The train, with its high intensity sound and regular daily schedule stood out as the one sound which almost all residents recognized and placed, and the one about which they further offered most comment. Residents who live close to the rail line acknowledged the familiar roar of the train and the clanging of its bell with some annoyance or regret. In contrast, residents who live further away from the waterfront considered its presence a positive one that adds to the character of the local community environment.

Resident comments on the seaplanes also varied. For those who live close to
Table 16

Ambleside: Residents Correctly Identifying Sound Recordings

<table>
<thead>
<tr>
<th>Sound Recording</th>
<th>Number of Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Train</td>
<td>27</td>
</tr>
<tr>
<td>Seaplane</td>
<td>25</td>
</tr>
<tr>
<td>Children in Lawson Park</td>
<td>12</td>
</tr>
<tr>
<td>Helicopters</td>
<td>9</td>
</tr>
<tr>
<td>Residential Street Recording</td>
<td>9</td>
</tr>
<tr>
<td>Local Park Sounds</td>
<td>15</td>
</tr>
</tbody>
</table>
the waterfront and park areas, the frequent buzz of the seaplanes that pass overhead forms something of a "nuisance", and a sound that has increased significantly over the last few years. Residents who live away from the waterfront in the residential areas to the north of Marine Drive, similarly know the sound of the seaplanes well, although their subsequent comments on them are less critical, and their common occurrence considered part of the local ambience ("they're there . . . but it's not really a big issue"; "there's lots . . . I never really notice them now").

In terms of the sound of children's voices from John Lawson Park area, it is those residents who visit the park on a regular basis as part of their daily routines who recognize the sounds of the children playing there. Other residents who visit the park only infrequently, or who never go there, mistook the children's voices recorded in the park with those they associate with the environs of Hollyburn School, as well as the beach and Ambleside Park.

The recording of the helicopter drew a mixed response from residents that varied based on their place of residence in the community. Thus, for residents whose homes lie in the southeastern portion of the community, and whose soundscapes include the middle-distance rumble of traffic from the Lions Gate Bridge, the clatter of traffic spotting helicopters forms a common element of the late afternoon and early evening periods. Residents who live on the western and northwestern fringes of the study area recognize the distinctive sound of helicopters, but do not associate the sound with a particular location in the neighbourhood.

Residents differed in their ability to differentiate between the street and park recordings made in their home community and those made outside. Fifteen residents correctly identified the recording made in John Lawson Park from the two other recordings made in False Creek and Commercial Drive. Seven
residents guessed incorrectly, while six were unable to distinguish between the three sets of sounds. The fifteen residents who correctly identified the sounds, indicated that the specific elements of the recording that "gave it away" were the sound of children's voices together with that of the seaplanes overhead.

Overall, residents found it difficult to distinguish between the recordings of local street sounds, with those made on Duchess Avenue between Seventeenth and Eighteenth Streets being commonly confused with the Commercial Drive and False Creek recordings. Residents described the sounds on all three recordings as "too similar" for many to distinguish. As a result, only nine residents were able to correctly identify the local streetscape recording, while thirteen guessed incorrectly and six declined to commit themselves. The inability of residents to identify the sounds of one local streetscape may be related in part to the diversity of local streetscape acoustic environments in the neighbourhood, allied with the high rise living of many residents which removes them from local street-level acoustic worlds.
Chapter Seven: Toward a Theoretical Perspective on the Acoustic Experience of Place

7.1 Introduction

The acoustic portraits outlined in Chapter Five provide a summary description of the local acoustic environments encountered in the three study areas. In each neighbourhood, a broad range of individual sounds were noted and a considerable variety of sound levels recorded. In objective terms, these sounds and sound levels reflect the diverse functions and activities of each neighbourhood, as well as the nuances of its physical layout and design. Within each neighbourhood, the ambience, texture and character of local acoustic environments varies, although the ubiquitous presence of vehicle sounds forms a common component of all the individual acoustic environments.

In addition to these objective descriptions, the acoustic experiences of local residents described in Chapter Six are similarly diverse and complex. The eighty residents each embrace the local sounds they hear in an individualistic manner. Common sounds are interpreted differently, and as a result acquire different meanings. Further, residence in particular parts of the neighbourhood, allied with the participation in varied local activities and pastimes, exposes residents to different sounds, as does their additional involvement in acoustic environments outside of their home areas. For each resident, their acoustic experience of local neighbourhood life is a complex but identifiable amalgam of sounds both past and present, which form a frequently taken-for-granted component of their daily lives. Indeed, the complexity of acoustic experience arises from the fact that individuals constantly pass through different environments which themselves are constantly in flux.

The aim of the current chapter is to draw the major research findings
together to reveal something of the relationship between local sound patterns and resident acoustic experiences. Close scrutiny of resident responses, framed against the objective descriptions of local acoustic environments, reveals some broad structures within residents' soundscapes. These, in combination, provide the basis for an examination of the nature of local residents' acoustic experience of place, and by extension a summary of the dominant acoustic senses of place for each of the three study areas.

The relationship between theory and reality in this case is thus presented with the theory of acoustic place experiences outlined first and then the actual experiences of local residents in each of the three study areas presented second. This is done to give the actual acoustic experiences of residents going about their daily lives as the 'last word'. Indeed, the theory developed informs the presentation of these experiences and provides an interpretive framework for their elaboration. Within an earlier draft of the thesis this order of presentation was reversed. In the final version the emphasis on residents' daily acoustic experiences as the central focus of the study dictates their presentation as the chapter finale. As a preliminary step in the description of these structures, and identification of dominant acoustic senses of place brief mention must first be made of some of the difficulties residents face in talking about their acoustic experiences.

7.2 Accessing the 'Hidden Dimension': Talking about the Sounds of Everyday Life

Discussing the sounds they hear as they go about their daily lives was a novel experience for most residents. When the study was first explained to them, and their participation requested, two responses were common: a remark about the study of sound as a 'strange' topic for research or the conceptualization of the
study of sound in more limited terms with a focus on noise. Arnold, for example, a long time resident of the Ambleside area, greeted the request for his participation in the study with the reply "Why would you want to study that . . . it's not noisy around here . . . is it?"

The query about sound as an object of study was echoed by interviewees in all three study areas. As a postscript to confirming that sound was indeed the object of study, it was frequently also necessary to address the more difficult issue of clarifying the focus on the broad range of sounds residents hear, rather than simply the noises that bother them. Both before and during the interview, therefore, the researcher reminded interviewees of the focus on all the sounds they hear to ensure resident attention to the broader definition of sound. The focus of some residents on what they consider local noises, as opposed to the broader array of sounds they hear, is a response consistent with previous studies of a similar nature in which residents have been called upon to discuss everyday sounds (Hawkins, 1980). While dealing with it in the context of the interview itself presented a research challenge, in the interpretation of the study findings the focus of many residents on what they consider local noises suggests something of the nature of their acoustic orientation to the local neighbourhood.

Across all three neighbourhoods residents' acoustic awareness or sensitivity differed. For some, sounds were important components of their local environments, while for others there was an ambivalence or indifference toward local acoustic events. Based on the nature of resident responses, two differing levels of resident acoustic awareness were evident which relate both to the individual listening habits and levels of listening of residents.

The levels at which residents listened to, or listened out for local sounds varied over time. At certain times they actively listened for individual sounds, such as the arrival of a friend's car or the voices of their children from the front
yard, while at others their interest in the acoustic environment waned and they directed little conscious attention to the sounds around them. These variations in listening levels closely match those of Truax (1984), with a broad distinction between implicit awareness on the one hand, and an explicit attention or focus on the other designed to tune out or focus on individual sounds. Residents' reliance on these different listening levels was common, and is discussed in a greater detail later in this chapter on the basis of the varied dimensions of resident acoustic experience.

At a second, and more encompassing level, however, residents also presented different listening habits and levels of acoustic sensitivity, which related rather to their dominant perception of sounds in a global sense, as opposed to their implicit or explicit awareness of individual sound events. Thus, for some, sounds were indeed an important part of their local world, and used for orientation and information. Conversely, for others, little attention was directed toward local sounds, all of which were approached with a similar ambivalence or indifference. Finally, for a third group, local sounds were frequently of interest, although the focus was invariably on 'unwanted sounds' or "noise", which bothered or annoyed them.

The preliminary discussions of residents' feelings toward their neighbourhood and their daily lives there, revealed some broad congruence between little or no interest in local sounds and a similar lack of commitment or attachment to place. The small number of residents with little or no interest in their own neighbourhoods, frequently demonstrated a similar lack of interest in local acoustic environments. While they were 'out of touch' with the local neighbourhood they were similarly 'out of tune' with the sounds that filled the spaces and places around them.

As an addendum to any discussion of resident listening habits and skills,
one common outcome of the interview process was the revitalized or increased acoustic awareness of many interviewees. In approximately one half of the interviews completed, residents indicated in some way that as a result of talking in detail about the local sounds they hear, as well as listening to tape-recordings of sounds, their awareness or consciousness of individual sounds had either been raised or reawakened. Residents, thus, described hearing sounds again that they had not consciously heard "for the longest times", and further also reported an increased interest in local sound events they had previously "hardly listened to".

While the interview process frequently resulted in a greater acoustic awareness for individual residents, the discussion of sound remained a challenge for many. At least one third to a half expressed some difficulty in describing and talking about local sounds. This difficulty relates both to the nature of acoustic experience itself, as well as the inadequacies of language to express such experiences.

7.2.1 Resident Articulation of Acoustic Experiences

No interviewee had before been asked to isolate a specific component of their everyday experience, in this case sound. Some expressed surprise. Further, none had ever discussed this single, often taken-for-granted element, of their everyday experience in an extended and detailed manner. The challenges presented by these two features of the interview are linked, but for ease of discussion they are presented individually below.

a) Sound as a Component of Everyday Experience

The sounds residents hear form part of their everyday experience of life and place. Indeed, residents embrace their neighbourhoods as melanges of
sights, smells and sounds in a holistic and habitual manner, with such mundane experiences an integral part of their experience of place. Residents' discussion of one component of this whole - in this case sound - frequently resulted in the inclusion and discussion of the accompanying elements as well, almost by default. A discussion of the sounds from a next door neighbour's car, for example, ("a noisy old thing"), frequently also resulted in the recall of other features such as its appearance ("it's an ugly brute . . . one of those muscle cars"), as well as its mechanical status ("very hard on gas") and a value-laden statement about the ownership and use of such a vehicle ("you'd never catch me driving one"). This aspect of interviewee responses suggests their inability to disaggregate elements of their larger sensual worlds, or at least the lack of necessity to do so. The interview encounter forced an analytical process of distinction on many interviewees, a process they had not undertaken before.

The sounds residents described form part of their broader experience of everyday life characterized by a constant stream of habitual thinking, seeing, hearing, being in a certain mood, having a certain feeling, and following a specific routine of behaviour and interaction. Within this routine, their multisensory experiences all contribute to their understanding of a given activity or space, allied with the underlying structures of their personal orientation to the world around them reflected in their mood and intention. The experience of the world in this global sense is a continuous component of their daily routine with little or no directed effort required to encounter the world around them. By focussing on one specific element of this everyday experience, however, namely the sounds that they hear, local residents were asked to delve into one component of their habitual understandings of daily life and routine, and to isolate this element for description and review. For many these habitual acoustic experiences were difficult both to recall and to express.
b) The Description of Acoustic Experiences

In the description of their acoustic experiences, residents faced the further challenge of discussing the spatial and temporal qualities of individual sounds, as well as the feelings they evoke and the particular associations or significance, if any, they attach to them. The difficulties residents faced in doing this relate both to the nature of human acoustic perception and experience on the one hand, and to the visual bias of language and verbal expression on the other (Ong, 1971; Truax, 1984; Schafer, 1985; Pocock, 1989).

Research into the senses and human perception suggests a theoretical distinction between two basic modes of perception: subject-centred or autocentric and object-centred or allocentric. While the former concerns how people feel, and is associated with a combination of sensory quality and pleasure, the latter is concerned with objectification and intellectual understanding, and involves both attention and directionality. This broad distinction allows for some differentiation between the different senses, with touch, smell and taste primarily autocentric, and vision mainly allocentric. As a combination of the two, hearing and listening share characteristics of both, with an allocentric focus in the perception of speech, and an autocentric one in listening to music. Although generalizations based on this structural distinction are relative rather than absolute, the autocentric senses tend to be more physically oriented, with a strong link to pleasure and comfort, while the allocentric senses are more intellectual and linked with thought and contemplation.

One outcome of these basic differences is that allocentric perceptions or experiences generally lend themselves much more readily to voluntary recall through the use of schemata which stress principal features, while the autocentric senses transcend such schemata (Pocock, 1989). Thus, olfactory,
tactile and even acoustic experiences are much more difficult to share than those of words or forms (Truax, 1984).

At a second level, difficulties in describing the primitive and sensual nature of acoustic perception, which "bypasses the cerebral and directly addresses the heart" (Pocock, 1989), are compounded by the structure of language. Frequently used idioms and expressions commonly have a visual bias that extends not only to everyday conversation and speech, but also to the description or discussion of acoustic experiences. Many residents, thus, used visual images for the description of auditory phenomena and in so doing confused their own expression and understanding. Descriptive categories for the ready classification of sounds and rhythms are generally not included in the vocabulary of non-musical respondents, and this in turn makes the description of acoustic phenomena difficult for most residents.

Residents in all three study areas had difficulty in describing their acoustic experiences. Common phrases which reflected these difficulties included responses such as "It's hard to really say", "what would you call it", "how could I put it" as well as qualifying statements such as "sort of", "kind of" and "in a way". Some of these problems were overcome during the short section of the interview that included tape recordings of sounds. Indeed, common neighbourhood sounds were frequently greeted with enthusiastic recognitions such as "that's it" or "of course . . . I meant to say that". These preliminary findings, although based on the responses of a small number of residents to a limited number of tape-recorded sounds, suggest the value of a more detailed examination of resident acoustic experiences with the use of pre-recorded local sounds one strategy for helping residents overcome some of the barriers faced in describing sounds and their feelings toward them.

Difficulties of language and expression aside, however, the eighty residents
interviewed offered diverse and varied summaries of their own local acoustic experiences which echoed the uniqueness of their daily lives, as well as the individuality of their feelings and perceptions. The analysis and interpretation of these experiences provides the basis for a preliminary discussion of the acoustic experience of place.

7.3 Sound and Place: The Acoustic Component of Residents' Daily Lives

In discussing the sounds they hear in and around their local neighbourhoods, most residents identified a blended mix of sounds that formed but one component of their daily lives. They described individual sounds in varying detail, and routinely identified many as basic to their daily lives. Residents commonly associated the local spaces of their neighbourhoods with a range of sounds that remained in a constant state of flux, albeit within a framework of repetitive sameness. Indeed, they often referred to the temporal nature of individual sounds, as well as their further association with specific events or sources. These common characteristics of residents' sound descriptions suggest two broad dimensions of acoustic experience: temporality, and the focus on sound events.

7.3.1 The Temporal Basis of Acoustic Experience

Flux and change underpinned residents' acoustic experiences. While the periodicity of the change varied, the broad conceptualization of local sounds as dynamic, changing elements of local scenes was the same. Residents described the changes in terms of seconds or minutes, "The cars come and go . . . almost like waves"; daytime periods, "The birds form a chorus early on . . . sometimes it wakes me up", "I only hear the trains in the morning . . . then it dies down", "It (the construction activity) starts first thing in the morning . . . and carries on 'til
early evening"; days of the week, "church bells every Sunday morning . . . I never miss them", "Friday nights are always a little weird . . . lots of parties"; and at the broader level of monthly or seasonal changes, "along with summer comes the car stereos", "beach parties and crowds of kids during the summer", "Fog horns in the fall . . . when the weather turns".

As composites of individual sounds, local acoustic environments were similarly constantly in flux, with the continual presentation of new sounds and their subsequent fading from earshot. On a perceptual level, residents' acoustic experience of places, thus, contrasts with their parallel visual experiences of them in both structure and form. While concrete and rooted physical phenomena, spatially oriented and distinguished, and relatively stable over time, characterize the latter, the former has a temporal structure, based on events that continually come and go and interact. Thus, an important distinction may be drawn between the spatially oriented and arranged physical landscape of a given place and the temporally structured acoustic dimension that accompanies it.

The visual and tangible elements of residents' streetscapes are dominated by stable objects that define space (for example, the arrangement of local houses, roadways and sidewalks), and against which the lesser motion or movement of others occurs (for example, the slow passage of pedestrians or the more rapid one of vehicles). In contrast, a constant flux of sounds that come and go characterize the accompanying acoustic dimension, which further fill space rather than define it. Indeed, the presence of stable or permanent sounds in the form of continuous acoustic events is the exception rather than the rule. In the isolated instances in which individual sounds approach some form of stability or permanence, for example, the background hum of distant traffic, or the roar from a local air-conditioning unit, residents either consciously 'overlook' them (distant traffic) or consider them a nuisance, stress or annoyance (the roar from
the air-conditioning unit). Sound in a normal situation is never static, and the everchanging presence of sound is timeful. As a contrast to this, the two most shattering and eerie situations are those of complete silence on the one hand, and that of a single unending note on the other. In both cases, the timeful variation of sound is lost, and the world 'de-timed', with an accompanying loss of order and structure.

In visual terms, the fluidity or temporality of environmental structures is a barrier to the comprehension of landscapes and place, where order and structure are contingent upon the identification of permanent structures spatially ordered or arranged (Lynch, 1972, Saarinen, 1978). Indeed, one of the basic elements of a visual sense of place is the familiarity of the streets, houses and parks visited or known which remain 'the same', especially after extended periods of absence. Within the acoustic dimension, however, the converse is true. Sounds, with their continual becoming and fading at a physical level, are structured and acquire meaning based on the identification of recurrent patterns or sequences of change. Unlike the objects of visual perception which have physical form, and therefore, permanence, the world of sound is fleeting and supports a way of knowing much different from vision: in the words of Schafer (1985, p. 96), "seeing is analytic and reflective. Sounding is active and generative."

While the discussion of place has focussed for the most part on the enduring and seemingly timeless or changeless visual characteristics of individual landscapes as key elements in a sense of continuity and the development of meaning and attachment to place, an examination of the accompanying acoustic dimension suggests the need for some revision of this dominant 'view'.

Experience in the real world supports both the primacy of time and space. Indeed, it has been argued that the temporal dimension matters more. People are
engaged more by narratives than static pictures, and by events that unfold in time, rather than objects deployed in space. There is a human vulnerability to events constrained by time as compared to objects or scenes curbed by space. Indeed, with the notable exceptions of Kantians (May, 1970), it is time rather than space which assumes a greater importance with philosophers. Both positivists and phenomenologists assert that time is logically prior to space, albeit from different philosophical perspectives. For scientific philosophers an ongoing interest in the nature of cause puts the emphasis on time, for the direction of the flow of time is thought to be determined by the causal interconnection of phenomena. Space, on the other hand, represents only the order of coexisting data. Among phenomenologists, time is similarly afforded precedence, given its association with the dynamic nature of being, becoming, duration and experience all of which underscore human life and existence.

In this sense, the 'timeful' quality of sound may be said to give meaning and structure to space. Indeed, the same space may at one time be tranquil and peaceful, while at another a mad rush of fury and activity based solely on the nature of the sounds present. Within everyday life, sound and space are brought together and form a joint and specific complex according to the situation in which they are set. While a continual state of flux and change characterizes the acoustic world, it is through the recognition of specific sequences and recurrent relations within this flux that order is established, and by extension a sense of place developed. In essence, the temporal structures of sequence and recurrence are the key to the acoustic character that individual places have for their residents, and on this basis, at least, some accompanying sense of place is developed in which "every day is multiplied by the days before it" (Stark, 1948, p.55).

This acoustic sense of place, based on the sequence and recurrence of
familiar sounds, is refined through the extended exposure to, and involvement in, a particular space. This enables its characteristic sounds to become familiar and a sense of place defined. Thus, as Tuan (1975) suggests, while it may be possible to appreciate, and even get to know, the visual qualities of a place in an "afternoon's tour", an acoustic sense of place is built up over a far longer period of intimate and close contact. Through prolonged contact and repeated experience, the product of day-to-day living, the sounds and rhythms of places become familiar and 'get under the skin' (Relph, 1976; Rasmussen, 1962). The resulting familiar or known patterns of sound, however, ultimately come to define the character of a place and give it meaning.

For individual residents in each of the three study areas their acoustic impressions of local places were thus underpinned by the recurrence of familiar sounds within a specific context or set of situational constraints. This dynamic acoustic experience of place, however, rested further on the identification of individual sounds and sequences of sounds, as the building blocks of local acoustic experience, and it is this second structure of acoustic experience which is considered next.

7.3.2 The Identification of Sound Events and Sequences of Sound Events

Residents' descriptions of local sounds centred, almost without exception, on the identification of specific sounds and their links with individual events or activities. These sounds were further commonly grouped into chains or sequences of sounds that served as specific frames of reference for local activities or interactions that had some relevance in residents' daily lives. The weekly movement of garbage trucks up and down the back lanes of the Commercial Drive area, for example, figures strongly in the soundscapes of residents who live off the Drive. The sounds residents associate with this weekly
routine include the roar of the engine from the garbage truck as it stops and starts along its route, the percussive sounds of garbage cans being banged together and then banged down again on the lane, as well as the accompanying chorus of local dogs which heralds the arrival of the trucks.

Residents' focus on individual sounds or sequences of sound suggests the role of both as basic building blocks of local acoustic experiences. Within a particular setting (for example, residents' local streets), in which a complex range of sounds continually come and go, each with their varied envelopes, rhythms and intensities, residents' acoustic experience centres upon the identification of individual sound events that 'stand out', or more literally 'sound out' against the backdrop or ambience of complementary or even competing sounds. One common feature of residents' acoustic experience of the different spaces and places that make up their local lifeworld was thus the identification of individual sound events from the complex web of sounds they encountered in each setting, and their subsequent sorting through them for meaningful or significant information.

The variety and complexity of local area sounds revealed both in the objective phase of data collection, and expressed in residents' soundscapes, suggests that local acoustic environments may, in experiential terms, may structured on the basis of background and foreground elements, with the former providing a context or ground in perceptual terms against which the latter unfolds. This finding is consistent with the earlier work of the World Soundscape Project (Schafer, 1977; Truax, 1984), and confirms earlier conceptualizations of acoustic experience. The evidence here, however, permits a refinement of the current models advanced, first through a focus on the unique spatial qualities of acoustic experience, and second through a description of the ability of residents to 'make sense' of local acoustic environments.
a) The Rich Spatiality of Sound

Residents' acoustic experiences of the places that form the basis of their daily lives were shaped by the 'rich' spatiality of sound. These places were filled with a variety of sounds which surrounded individual listeners, much like a fluid which contains varying shades, viscosities and currents. This global encompassing of sound dictated that the acoustic experience of individual residents was shaped by the fluid ability of sounds to flood and intrude upon their consciousness and form an integral component of their daily lives.

Within this totality, the sounds residents heard or recalled were those that attracted their attention or interest; that is those sounds that literally 'stood out' or 'sounded out' against the others present. The relationships between individual sounds within residents' soundscapes were, thus, primarily temporal, power-oriented, pitch-related or semantic. The piercing sound of emergency vehicle sirens, the rumble of the train, and the beating of the drum from dragon boats all sounded out against the surrounding complex of sounds. While there was thus commonly a geographical quality to listening, with individual sounds interpreted as coming from a specific direction, as well as a certain distance away, this remained a secondary characteristic of residents' acoustic experiences.

In sorting through the complex array of sounds in individual acoustic environments, residents distinguished between individual sounds not in spatial terms, with particular sounds assigned to precise locations or points in space, but rather in temporal, power, pitch or semantic terms, with individual sounds highlighted from within the all-encompassing and surrounding flux. In most cases, residents' acoustic experiences of specific spaces or places were thus characterized by a 'rich spatiality' or fullness, that contrasts with the more focussed recognition and recall of visual phenomena premised primarily on the
juxtaposition of neighbouring objects (for example, the small house next to the large blue one, or the pathway that runs behind the playing field).

This is not to suggest that the acoustic experience lacks its own spatial distinctions and precisions, but rather that the strict application of visually based spatial realities to the acoustic experiences of urban residents surrounded by a crowded array of broadband and low frequency sounds auditory phenomena is inappropriate. Rather, urban residents' acoustic experience of individual spaces retains a spatial 'richness' based on the pervasive flood of sounds that invade the consciousness of the individual listener, from all sides and from varied distances, but a comparative spatial 'poverty' in terms of the strict definition of sounds in spatial or relational terms. This contrasts with the more spatially defined acoustic environments of many rural settings which with their lower ambient sound levels and lesser volumes of low frequency sounds retain an acoustic clarity and definition which most urban contexts lack. Within such settings individual sounds may commonly be 'placed' and used as markers of spatial relationships. Within the more diffuse, high ambient sound levels of urban environments, however, the 'sounding out' of individual sounds from the collective whole of acoustic environments remains the key feature of resident acoustic experiences, and one which shapes their resulting acoustic sense of place.

b) Deciphering The Local Acoustic Environment

Residents, in their descriptions of local acoustic environments, commonly isolated particular dimensions of sound as if they were individual elements. In so doing they 'broke' the rich complex of sound experienced in any place (for example, their local street) into its individual elements. Thus deciphered, the totality of the acoustic environment was understood as a series of interrelated
sound events which were associated with the daily flow of particular events or activities. Such patterned understanding thus provided the basis for information about sound sources, activities and contexts.

Residents' ability to decipher the acoustic environment in this manner is consistent with Truax's (1984) description of what he termed "soundscape competence" and Bregman's (1978; 1990) focus on the isolation of acoustic "streams". Both concepts have considerable relevance in the discussion of the development and maintenance of local residents' acoustic sense of place, and are thus outlined in brief form below.

Soundscape competence is the tacit knowledge that all residents have of the structure of environmental sound and may be compared conceptually to notions of linguistic and musical competence. Lifelong exposure to environmental sound results in the development of a complex body of knowledge on how to identify and discern the structure of environmental sound, with the goal being one of obtaining information on the local events unfolding there. Based on past experience, the listener sets up a logical series of expectations about what indeed might occur next, given the particular patterns of sound. Such expectations are continually refined on the basis of individual experience, and thus provide the basis for acoustic perception and understanding.

Bregman (1978; 1990) offers a refinement of this model of soundscape competence with a more specific focus on the human predisposition to identify and define the presence of individual sounds and their subsequent association with particular events. According to Bregman, the listener within a given environment, surrounded by a multitude of events and their resultant sounds (such as the movement of local traffic, the singing of birds or the wind in the trees), makes some sense out of the complex wave pattern produced by isolating and attending to the various sub-portions present, termed by Bregman (1978;
1990) as "streams", each of which is associated with a separate source or event. The perceptual outcome of the analysis of this complex wave pattern is thus not chaos, which may well be the result if it were perceived as a unitary phenomenon, but rather what is heard is a distinct set of events whose express sounds comingle rather than blend.

The separation of environmental sounds into streams involves the application of what he terms both 'generic' and 'non-generic' rules. Generic rules are a product of general experiences of regularities in the auditory world, and thus match Truax's (1984) concept of soundscape competence. Such rules are similar to the gestalt principles of visual orientation and contribute to a general understanding of acoustic structure and meaning. In addition to generic gestalt-like rules, however, Bregman also identifies what he terms nongeneric rules which incorporate the listener's knowledge about specific sounds, and hence relate to local experiences, contexts and situations. Such rules are developed on the basis of local experience in specific geographical settings and as a result have a contextual quality. In the identification of specific sounds, both sets of rules are crucial, according to Bregman, and together they provide a basis for the perception of individual environments. Thus, generic rules remain effective in the isolation of a given stream of sound that projects from a particular event, while specific or nongeneric rules are subsequently used to recognize the isolated stream of sound, and to interpret its meaning and significance based both on past experience and current intention.

Residents' descriptions of their local acoustic environments suggested their use of both generic and nongeneric rules in the isolation and identification of specific sounds. All residents readily identified individual streams of sound, and further attached specific meanings to them based on past experience and understandings - that is, they showed a specific soundscape competence.
Residents in the southeastern portion of Commercial Drive, for example, identified the individual sounds of, among other things, middle-distance traffic flows from the Drive itself, the sounds of local traffic during the day and evening, the smooth sound of the skytrain as it glides into and out of the Broadway Station, the varied sounds of birds singing and church bells.

In addition to this ability to isolate and identify individual sound events, however, residents were further able to offer more detailed descriptions of local sounds they associated with specific activities or occurrences. Thus, the characteristic roar of a neighbour's car, the voices and footsteps of regular visitors, or the characteristic bark of a particular dog were all highlighted as recurrent sounds residents associated with particular local events or activities. In terms of the development of a particular acoustic sense of place, it was commonly these small idiosyncratic sounds to which residents referred, albeit framed against specific acoustic 'backgrounds' (for example, distant traffic flows), which contributed to their unique form and definition.

Within this broad framework of resident acoustic experience of daily life, underpinned by a temporal structure and predicated upon the isolation and identification of individual sound events, or sequences of sound events, four specific dimensions of experience may be identified which, in combination, form the basis of residents' acoustic experience of place: sound as context; sound as information; sound and feeling; and sound and memory. While the four are interrelated, they are discussed separately below.

7.4 The Dimensions of Resident Acoustic Experience

7.4.1 Sound as Context

In their interactions with the world around them interviewees were, as
indeed everyone is, engulfed within a world of sound. On all sides they encountered a variety of acoustic environments which they embraced with varying levels of conscious awareness. The acoustic orientation of individual residents to the local community and the major activities and events that unfolded there was characterized by both an implicit and explicit awareness of the local sounds that surround them. Indeed, over time, the awareness of particular sounds became implicit rather than explicit.

Within the confines of their local streets, for example, residents did not consciously register every sound they heard, nor every feature of the varied acoustic environments through which they moved. Rather, residents demonstrated an implicit awareness of individual sounds, and did not refer to them at a conscious level. In their daily interactions with the community, residents thus relied on a type of acoustic 'automatic pilot' to guide them. It is as though they had already encountered, analyzed and given meaning to many local sounds, and then slotted them in an appropriate 'file of awareness' so that the presence is known but not always recognized. Common sounds were frequently relegated to the level of context and as a result not explicitly considered nor reviewed for detail unless some particular variations in their physical structure or content took place, or alternatively the attention of the resident was directed to a specific element of their local soundscape.

Truax (1984, p. 22) refers to this implicit awareness of local sounds as "background listening". Truax (1984) hypothesizes that the most likely reason for sounds to be heard in the background listening mode is their "usual occurrence" and therefore "expected and predictable quality". Implicit awareness of common sounds nevertheless forms a significant dimension of resident's acoustic experience of a particular environment since the sounds which are habitually heard or listened to may be considered, on a physical level
at least, to form the fundamental acoustic characteristics of the place itself, given their "usual occurrence".

Background listening remained a common feature of residents' acoustic experiences. Through the interactive interview process, residents were, however, able to describe in broad terms their own background listening experiences. Residents' summarized these experiences as a 'natural' outcome of their residence in the community, and even gave specific examples: "It used to really bother me (the wind)... and now it doesn't... I got used to it". Others reported some conscious effort in relegating individual sounds to a background or ambient role: "I find that I all but block the noise (traffic) out."

In addition to these self-reported background listening experiences, the implicit acoustic awareness of other residents remained more pervasive and, thus, more difficult to uncover. The provision of specific acoustic cues through the focus on local sounds during interviews did reawaken some residents' acoustic orientation to commonly heard sounds. In most cases, the sounds 'reheard' after an extended period of implicit awareness or background listening were mechanical, repetitive low frequency or flat-line sounds. Specific examples included the hum from the air-conditioning unit on top of the Vancouver East Cinema, and the distant roar of traffic from the Granville and Lions Gate Bridges.

During the tape recordings portion of the interview, respondents further referred to what may broadly be called background or ambient sounds in their selection and identification of specific recording sites. In the Commercial Drive area, the soundscape of Grandview Park was distinguished from the park sounds in the other two neighbourhoods by background traffic sounds and the "distant voices" of children. Similarly, Ambleside residents found the middle distance sounds of small waves breaking on the shoreline, as well as the swirling of the
wind in the trees, acoustic indicators of John Lawson Park. Thus, such ambient sounds, heard through background listening, were not only retrieved in response to probing questions in the interview, but became at the conscious or reawakened level even diagnostic of acoustic environments. Indeed, residents relied on them to distinguish their own realms of acoustic experience from other unknown ones.

7.4.2 Sound as Information

While the acoustic orientation of residents to their local acoustic environments included an implicit awareness of recurrent sound events and local acoustic ambiences, it also involved the more deliberate identification and interpretation of particular sounds, and the gathering of specific information from them. Resident soundscapes included a range of sounds that they commonly associated with specific places and the daily activities or routines that unfolded there. As a complement to these general descriptions, residents also referred in more detail to specific sounds they associated with particular events or sound sources that had some direct relevance for, or impact upon, their daily lives. Thus, three levels of acoustic experience were reported, all of which had an information component.

Many of the sounds residents identified as part of their local soundscape had a more transient or unpredictable physical quality. They literally 'sounded out' against the general acoustic ambience. The identification of these sounds, however, was influenced more by the nature of resident listening habits, as well as their exposure to local acoustic environments, than by the physical characteristics of the sounds themselves. Thus, residents in the same part of the neighbourhood often heard individual sounds that their neighbours did not. Within the broad range of sounds described, however, some common acoustic
experiences were discernible.

Residents' acoustic orientation to their local areas may be summarized on the basis of its focus and detail. First, most residents had a general awareness of the varied acoustic environments found in their local neighbourhoods, and the broad nature of the sounds heard there (for example, traffic 'noise', voices and shouts and the sounds of birds). For the most part, however, these descriptions were barren of detail or nuance, and formed imprecise caricatures of complex acoustic environments. Thus, residents in all three study areas offered broad descriptions of the presence or absence of traffic sounds in the different parts of the community, and the varied sounds of human activity and of natural sounds.

At a second level, residents had a more detailed knowledge or awareness of individual sounds and sound sequences. These were frequently local sounds that they heard or listened out for on a regular basis, and which they related to specific events or activities that had some impact on their daily lives. While examples of this more detailed awareness of local sounds differ, three specific cases include the arrival and departure of cinema patrons in the Commercial Drive area, drumming and chants from dragon boats crews in False Creek, and the vibrant accounts of childrens' shouts and cries from the early Sunday morning soccer games in Ambleside Park.

In form and structure, these more detailed points of acoustic awareness had four main characteristics. First, familiarity facilitated the maintenance of the detailed or subtle awareness of specific local sound events. Sounds listened to on a regular, but not repetitive, basis were those reported in detail. Second, the sounds described were commonly heard either close to residents' homes, or alternatively in specific neighbourhood places they visited on a regular basis, for example, the local park in Ambleside, the marina in False Creek or the shopping core in Commercial Drive. Third, the sounds were frequently related to some
specific event or activity that had a particular meaning or significance for the residents. Thus, interviewees listened for such sounds with a degree of anticipation and expectation. Fourth, the sounds were all directly experienced, and not the product of vicarious experience or inference.

7.4.3. Sound and Feeling

Individual sounds and broader acoustic environments were frequently imbued with a meaning and sentiment that elevated them above the basic functions of contexts for interaction or sources of information. The feelings residents expressed, or more commonly alluded to, in relation to sounds ranged from anger and frustration at one extreme to delight and pleasure at the other. In between these two extremes, the majority of feelings residents expressed were more amorphous, and as a result more difficult to conceptualize or communicate. From a research perspective, the challenge was to capture the unique feelings of individuals, a problem of considerable magnitude (Bergson, p. 218 cited in Tuan, 1975). The experiential essence of feelings is quickly lost in the process of communication and not easily recorded or described. Language and communication difficulties aside, however, a few residents were able to speak discerningly of how they felt about local sounds.

Residents' feelings varied both in their structure and duration. While some were brief, context-specific and fleeting, others were more recurrent, permanent and added a deeper quality to ongoing resident interactions with the world around them. The particular sentiments were for the most part personal and private, although between individual residents some shared feelings were evident, the result of common experiences and shared values and ideals. One example of these shared sentiments was residents' general anger and frustration toward traffic sounds which frequently dominated their local soundscapes,
although the feelings of individual residents also varied as a function of the time and place in which such sounds were heard.

Brief or immediate acoustic sensations were conceptualized in polarized terms, and related to sounds that caught residents' attention. Such sounds included the sound of individual "noisy" vehicles speeding by residents' homes, or those of cats fighting, both of which drew strong immediate reactions which were context-specific and transitory in nature. While the form of the feeling or emotion varied, for example anger or fear, the nature of the response remained immediate. Residents showed similar responses to sounds which caused some dramatic change in the local acoustic environment with little or no previous warning, such as the sound of an alarm, or raised voices and shouts, and loud bangs.

At a second level of involvement, residents' feelings took on a more extended nature or repetitive consistency, with specific sounds evoking a recurrent emotional response in individual listeners which in turn deepened the associations developed. The sound of church bells in the Commercial Drive area, for example, formed a warm and nurturing sound for residents which prompted feelings of security, continuity and integration. Conversely, the frequent sound of emergency vehicle sirens was greeted with resentment and frustration, and with an associated sense of fear or loss related to the uncertainty that surrounded the emergency itself across all three study areas.

At a third level, residents' daily lives were 'enriched', or even 'diminished', by an array of permanent sentiments that related to the basic structure and content of local acoustic environments. For residents whose soundscapes retained a detailed and personal perspective, local acoustic environments were not only scanned for detail, but further took on an emotive or symbolic significance that extended beyond their physical characteristics alone. Based
among other things on repeated experience, an affective bond developed between these residents and local sounds which contributed toward the articulation of distinctive, persistent auras or ambiences. Often the structure or form of these distinctive ambiences could only be vaguely articulated, but it was deeply sensed, as revealed when new sounds threatened its dominant character.

Specific examples of this more permanent sentiment or aura defined by residents in the Commercial Drive area include the "cosmopolitan", "dynamic" and "ethnic" character afforded the Drive, and the neighbourly, friendly and community ambience assigned to the side streets off it. Within Ambleside, long-time residents focus on the small village or waterfront ambience of residential streets away from Marine Drive served as another local example.

While certain examples suggest the maintenance of positive auras or sentiments, some residents had decidedly different feelings toward the sounds they hear. Residents who live on or close to the major roads in all three study areas were commonly much more critical of their local soundscapes. Indeed, the experiences of some extended beyond feelings of anger and frustration and were compounded in those of isolation, loneliness and separation.

7.4.4. Sound and Memory

As a final dimension of acoustic experience, some residents identified and described local sounds that possessed a mnemonic quality. Thus, individual residents related train whistles, the voices of children and the sounds of birds singing to past times and places and commonly the experiences or feelings associated with them. The cues for particular memories were sounds residents strongly associated with times and places geographically and temporally removed. Thus, the distant sound of train whistles reminded one Commercial Drive resident of his early life growing up in small town Ontario, while the
chattering and singing of the birds reminded a long time Ambleside resident of her youth in Cornwall, in southwest England.

While the mnemonic qualities of individual sounds reinforced a sense of belonging and participation for some residents, for others they accentuated their current disenchantment and even their sense of loss. Thus, in the above two examples the sound of trains was a comforting one for Michael, linking him with his early life, while for Edith the thoughts of her distant childhood merely emphasized the loneliness and isolation of her current daily life and routine, placing the optimism of her childhood in stark contrast to her current unhappiness. Nevertheless, in both instances, the mnemonic qualities of individual sounds imbued the local acoustic environment with a greater depth of meaning and significance that extended beyond the mere physical characteristics of the sound or its source.

While all residents embraced their local acoustic environments across these four dimensions, albeit at varying levels of involvement, their individual acoustic experiences of place also included a further fundamental differentiation of the environmental setting. Thus, residents' acoustic experiences further retained a hierarchical structure that centred upon the sounds of their immediate home environment with a lesser emphasis on experientially 'distant' spaces beyond this immediate setting. Based on the identification of some broad distinctions across resident interviews, the following brief hierarchy of resident acoustic experiences of daily life may be defined.

7.5 A Hierarchy of Local Acoustic Experience

The sounds most residents recalled and described as part of their local soundscapes centred upon the immediate local area in which they lived, namely their home base and local street. In addition, sounds from the neighbourhood
spaces residents visit or pass through on a regular basis were also commonly described in detail. Together, it was the sounds residents' associated with these intimately known places which formed the basis of their acoustic sense of place, and to which they returned on numerous occasions during the interview. The sounds from a third acoustic domain, lesser known sections of the community peripheral to residents' homes and the places they visit or pass through on a regular basis, figured less prominently in their soundscapes.

7.5.1 Home Base and The Local Street

The hierarchical structure of residents' acoustic experiences was reflected in the extensive detail included in their descriptions of sounds heard on a regular basis in and around their homes and local streets. These contrasted with their more general descriptions of the sounds they heard in other sections of the community. For most residents the sounds associated with the immediate environs of their home base or local street were the fulcrum of their local soundscapes, and as such distinguished from broader acoustic environments associated with other lesser known neighbourhood spaces. The sounds from these personal spaces formed key elements in residents' daily lives and included, among others, birds feeding, footsteps outside a front door, Sunday morning church bells from across the street, and the sound of the neighbour's dog barking in the early morning.

These sounds commonly had both an immediacy and 'rich spatiality'. Small intimate sounds were regularly juxtaposed with strong distant ones: birds feeding, the gentle tune of wind chimes, boats horns from the inlet, and jet aircraft overhead. This juxtaposition of sounds associated with local and non-local events was a common feature of resident soundscapes, although the balance between local and non-local sounds varied as a function of the
relationship between local ambient sound levels and the intensity of distant sound sources. While the relationship was complicated by the listening habits of residents, interviewees whose local acoustic environments were characterized by the highest local ambient sound levels (generally associated with heavy local traffic flows) reported fewer sounds from events or activities outside their local home base or street, than did residents whose home environs were characterized by lower ambient sound levels.

Residents in single-family dwellings on the side streets off the Drive in the Commercial Drive area, and away from Marine Drive in Ambleside, commonly added a 'front' and 'back' door orientation to their local soundscapes. Within False Creek, however, with its 'doughnut' shape enclaves, this particular local variation in resident soundscapes was replaced by a broader distinction between the soundscapes of residents in the same neighbourhood whose homes face a different direction or look out over a different part of the local area. The distinction between front and back door soundscapes was most pronounced in Commercial Drive, with its traditional alignments of single-family dwellings. The majority of residents who highlighted a difference considered their back or backyard soundscape the 'quieter' and 'most private' of the two. Indeed, this was the space in which they further felt most "sheltered" or protected from the world outside. In similar fashion, residents in the northwestern sections of Ambleside, whose homes lie close to Memorial Park, considered their carefully tended backyards or gardens "havens" from the "busy streets below".

While the sounds residents heard within their home areas were frequently described in detail and related to specific events, they also commonly took on a symbolic significance. Thus, based among other things on repeated experience, an affective bond frequently developed between residents and the local sounds they heard on a regular basis. Such sounds were often imbued with meanings
which in turn emphasized the distinctive and personal nature of home environments.

This bond between residents and local sounds was accentuated by the personal or private quality many attributed to these local acoustic environments. Indeed most residents considered them realms over which they possessed, or more frequently were entitled to possess, some degree of authority, ownership or control. As a result, these immediate acoustic environments were the most closely surveyed for incoming sounds, and similarly the most anxiously guarded or protected against sounds considered invasive or intrusive. In all three study areas, residents commonly identified individual sounds which they considered intrusive, for example, traffic sounds, late evening trains and the early morning sounds of birds. In addition, a smaller number of residents also referred to community-wide invasive sounds that were absent from their local areas, a partial measure for them at least of the area's status or positive acoustic ambience. Examples included, the blast of emergency vehicle sirens in all three areas and the drone of the skytrain in Commercial Drive.

The conceptualization of the local acoustic environment as a space over which residents were entitled to some degree of control or authority suggests its construction as a 'familial space' or 'territorial preserve'. In this manner, it commonly forms in Bollnow's terms "an inviolable area of peace" (Bollnow, 1967, p. 182), a theme earlier developed by Bachelard and amplified in the later writings of Tuan (1975), albeit primarily in visual terms.

7.5.2 Activity Centre Sounds

In addition to sounds they heard in and around their local street and home environs, residents also referred to a series of specific sounds they associated with major activity centres or spaces in the neighbourhood they visit on a
regular basis. These included neighbourhood parks, shopping areas and the homes of family or friends who live close by. Residents' descriptions of the sounds that they heard in this second array of places were generally less detailed and less personal than those of their local acoustic environments. Although there remained a sense of social affinity and even an affection for a sample of these additional acoustic environments, overall the involvement of residents within these acoustic spaces was neither as intense nor as personal as with their home environments. By comparison with the sounds heard in residents' home acoustic environments, sounds associated with the activity centres visited on a less frequent basis, retained a functional rather than an emotive quality.

### 7.5.3 Other Community Spaces

Moving further away from the resident's home base, the local acoustic environments described became on the whole more disjointed and fragmented. For many residents, the detailed and affective soundscapes of their local street environments were replaced by an array of acoustically known spaces amid a broader territorial uncertainty. The known spaces or enclaves included the numerous places or centres that residents visited on a regular basis, and which thus formed an acoustic collage of experienced haunts. Intimate knowledge of individual spaces or settings was thus set within a broader general acoustic impression of the community.

Familiarity, thus, contributed to the maintenance of differentiated acoustic spaces which coincided with the frequently visited or travelled areas of the neighbourhood. In the Commercial Drive area, for example, residents reported differing levels of acoustic awareness in relation to the music sounds from the stores and restaurants in the retailing core. Seventeen reported music from Drive businesses and stores as one element of their local soundscape, although their
knowledge of particular sounds differed. Indeed, there was a clear distinction between those residents who indicated that they frequently visited individual restaurants, stores or cafes and those who did not. Two residents who regularly visited the well known Joe's Cafe, located half a block north of Grandview Park, for example, described its contemporary counter-culture music as unique on the Drive. By contrast, the individuality of Joe's ambience was unnoticed by the other fifteen residents who subsumed it within the broader category of local restaurant or store music.

Similarly, Ambleside residents who regularly visit John Lawson Park with either their children, family, friends, or alone described in much greater detail the range and diversity of local sounds heard there than those who did not. In addition, they were also more likely to be able to identify the distinctive sounds of the park on the tape recordings played during interviews.

This broad hierarchical structure of resident acoustic experiences suggests a relationship between resident involvement in, and attachment to, their local area and the content and structure of their soundscapes. Indeed, residents' knowledge and awareness of community sound events remained closely linked not only to their habitual patterns of interaction and movement within the community, but also to their personal histories as well as their involvement in and commitment to the neighbourhood as a place to live. Based on repeated experience residents established acoustic "fields of care" (Tuan, 1975) or "networks of interpersonal concern" in their local areas. The acoustic character of particular places thus became part of daily experience, with common sounds a familiar context for everyday life and routine.

Overall, the sounds residents described as part of their local neighbourhood soundscapes were those associated with their daily activities and routines. This characteristic of acoustic experience suggests the need for extended experience
or exposure to a given acoustic environment before it becomes known or familiar. Thus, it may be hypothesized that while it remains possible to know large parts of a city based on its landscape characteristics alone, to gain an awareness and understanding of the acoustic environment demands a greater intimacy and exposure to local sounds on a daily and personal basis. In this manner, recurrence provides the basis for attachment, and the functional pattern of daily life contributes to a sense of place. In the course of their daily routines residents regularly go from one place to another, following established paths, so that over time a web of distinct spaces, and their links, becomes established. As part of this process, an acoustic experience of place is also constructed, with a spatial congruence between "fields of care" and familiar acoustic spaces, although residents are not able to communicate easily these associations.

Given the brief identification of the varied dimensions of resident acoustic experiences, allied with their structure, the final section of this chapter sketches the dominant acoustic senses of place for residents in the three study areas. These soundscapes draw on the empirical data presented in Chapters Five and Six, as well the theoretical framework for acoustic experiences constructed in the current chapter.

7.6 The Acoustic Experiences of Place: The Content of Residents' Soundscapes

The soundscapes of residents in each of the three study areas reflect the diversity of their ongoing dialogue with the world around them. Residents' acoustic experiences of daily neighbourhood life and routine are the product of their varied interactions with, and involvement in, the local community as well as their additional contacts with other environments and spaces outside of these local areas. Within the diverse range of residents' acoustic experiences,
however, common elements provide the basis for an assessment of the distinctive acoustic identity or character of each neighbourhood. Turning first to the Commercial Drive area, the following dominant acoustic experiences of place may be identified.

7.6.1. Commercial Drive Soundscapes

The major sounds residents identified reflect the broad functional and physical characteristics of the neighbourhood. Residents placed a particular emphasis on the heavy traffic flows that dominate the environs of First Avenue in the heart of the neighbourhood and Broadway Avenue on its southern margins, the cosmopolitan and dynamic music and activity sounds of the commercial and business core centered on the Drive, and the relative tranquillity of the network of side streets that branch off the northern and southeastern portions of the Drive.

The local keynotes are a combination of traffic, transportation, people, natural and business-related sounds. A broad distinction may be drawn between the soundscapes of the eight residents whose homes lie either on, or in close proximity to, the busy local streets of Commercial Drive, First Avenue, and Grandview Highway and the soundscapes of those residents who live away from these busy roads on one of the quieter, more sheltered, residential side streets off the main Drive.

The soundscapes of residents whose homes overlook or stand close to these major routeways are dominated by the high intensity roar of anonymous traffic sounds. In contrast, residents who live on the side-streets described a much greater range of sounds. Within this broad group of residents, however, a further distinction exists between those residents whose soundscapes focus on the activities of their local streets, and those who emphasize rather the cosmopolitan
flavour or ambience of the Drive. Based on these distinctions, three dominant acoustic experiences of place may be identified and summarized under three headings: Busy Thoroughfare Soundscape; Cosmopolitan Social Soundscape; and Older Suburban Residential Soundscape.

1) Busy Thoroughfare Soundscape

The eight residents who live on or close to one of the major community thoroughfares of Commercial Drive, First Avenue and Grandview Highway, primarily hear near constant, high intensity traffic sounds or "noise". Their soundscapes are dominated by the roar of vehicle engines, the squeal of tires, the blasts of car horns and the pounding bass beat of car stereos, all of which form the keynote sounds.

They describe these sounds as a "wall of noise", a "noisy din" and a "constant problem". Within the general cacophony residents draw only broad distinctions between the different sounds of cars, trucks, motorcycles and buses. The majority of vehicle sounds are anonymous, and associated with neither particular events nor activities. Rather, they are summed up as "always the same" or "always there".

The sentiments or feelings these residents expressed in describing the character of their local soundscapes range from anger and frustration at one extreme to resignation or apathy at the other. A general mood of resignation or apathy, in the face of constant traffic sounds, belies a deeper feeling of powerlessness. Two residents use the promise of a future move as a rationale for "putting up with" the current volume of traffic noise, while two others, both students, considered traffic noise a trade-off against higher rental costs, part of a calculated residential compromise.

As one acoustic outcome of the pervasive presence of high intensity low
frequency traffic sounds, the soundscapes of these eight residents are largely devoid of the variety of sounds that characterize the community as whole. Natural sounds, for example, remain largely absent, while people-sounds are associated primarily with local activities on the Drive itself, particularly Friday and Saturday evening parties. The dominance of local traffic sounds isolates these residents from the broader array of sounds and ambiences around them. It further precipitates a deeper acoustic alienation from much of daily community life. Indeed, the dominant acoustic experience of these residents is one of living on the "main drag".

2) Cosmopolitan Social Soundscape

For seven residents, their acoustic experience of Commercial Drive rests on the music, people and activity sounds that surround the many restaurants, cafes, stores and other businesses concentrated in the northern sections of the Drive. As a second element of this dominant social or cultural acoustic character, the varied daytime and evening sounds from Grandview Park echo the neighbourhood's "spirit" and cultural diversity.

The songs of street musicians, music performances in Grandview Park, and the voices and shouts of pedestrians on the Drive dominate the soundscapes of these residents. This eclectic mix of sounds reflects the general hub-bub of activity that characterizes the Drive, and is synonymous with "a lot going on", and the "sound of things happening". Distinctive local sounds (sound signals and sound marks) include the varied sounds of rap music from car stereos, drum and saxophone sounds from Grandview Park and the "babble of different languages" on the Drive. While heavy traffic flows on the Drive are a big part of neighbourhood soundscapes, they do not overwhelm the neighbourhood's cosmopolitan ambience, although the busy intersection of Commercial and First
Avenue comes close.

Unlike the first group, who live directly on the Drive, most of these residents live away from it and are sheltered from heavy traffic flows. The various restaurants, cafes and bars of the Drive are an integral part of these residents' lifeworlds, and places they visit on a regular basis. The sounds of their favourite haunts are well-known. They further define the particular crowd to which individual patrons or restaurant goers belong. While most 'float' between different establishments, others are committed to one or two alone.

3) Older Suburban Residential Soundscape

The third acoustic experience of place centres upon the neighbourhood as primarily an older residential area. Eleven residents' soundscapes retain this residential focus, although for some the neighbourhood is seen as a revitalizing or regenerating one, while for others it is changing for the worse. The residential character of the neighbourhood is reflected in the ambient sounds of birds singing, pedestrians out walking and talking, neighbours at work in their yards, on their cars and on their homes, children playing, church bells, dogs barking, and the sound of wind in the trees.

Residents who live in the southeastern portion of the neighbourhood (to the south of Third Avenue and east of Commercial Drive), regularly hear birds singing from the mature deciduous trees that line the streets in this part of the Drive, dogs barking, trains passing through the Grandview Cut, and the middle distance smooth tone of the skytrain heading into and away from the Broadway Station. In contrast, residents in the northern section of the study area (north of Grant Street) hear bells from St. Francis of Assisi Church, the distant sound of boat horns from the inlet, seaplanes overhead and children's voices from Victoria and Grandview Parks.
While the mix of residential sounds residents hear varies, in combination they are associated with a relative "peace and quiet" that contrasts with the elevated sound levels and generally "noisy" acoustic environment of the commercial and business core on the Drive. These residents are protective of the peace and quiet that characterizes their local streets and angered by, among other things, local traffic sounds and "noisy neighbours", "speeding cars" on local streets, the late night sounds of cinema patrons, the late evening shouts of teenagers or youths, as well as those of "suspicious" shouts and voices from the Victoria Park area, all of which threaten their residential tranquillity. Among these, the soundscapes of three long time residents retain a nostalgic quality. For them, current local sounds and acoustic environments compare unfavourably with past soundscapes. The major change is a considerable increase in local traffic noise, which reflects a general decrease in the community's friendliness and the increased pace of daily life. As a further dimension of this nostalgic sense of place, some associate current sounds with distant times and places, thus adding a further personal dimension to their local acoustic worlds.

The eleven residents whose acoustic experience of place retains this residential orientation include three homemakers, three retirees and five working adults. The homemakers and retirees all spend most of their day in the reaches of their local areas, which for two of the retirees centres on the immediate vicinity of their homes and backyards and for the three homemakers extends to include their local street and several of the stores nearby. Each of these residents is attached to the neighbourhood in a variety of different ways, with their local streets a basic setting for the varied activities of their daily lives. The sounds these residents hear are the everyday sounds of neighbourhood life. Through repeated experience these sounds have come to have a deeper significance for individual residents and serve, in large part, to define and confirm the
neighbourhood's residential character.

7.6.2 False Creek Soundscapes

The dominant soundscapes of False Creek residents reflect the functional and physical characteristics of the area. Residents in different parts of the Creek hear different sounds which echo the characteristics of their individual neighbourhood settings, as well as those of the spaces they visit or pass through as part of their daily routines. High intensity traffic sounds dominate the soundscapes of 'back' residents whose homes front onto the major routeways that surround the Creek. By contrast, residents whose houses overlook the waterfront hear marina and recreational sounds, although a background rumble of distant traffic sounds is also audible.

Residents whose apartments or condominiums are in the 'interior' of the site, within the numerous doughnut-shaped enclosures that form part of the physical design of the individual neighbourhoods, describe their local soundscapes as "quiet" and "sheltered". Even within these sheltered spaces, however, the low rumble of traffic forms part of the ambience. Within this predominately residential soundscape, however, further distinctions exist between the established, people-oriented and human-scale residential soundscapes of the Spruce and Alder neighbourhoods, and those of the still evolving, building-oriented Heather soundscapes.

Based on these broad acoustic distinctions, four local acoustic experiences of place may be described under the headings of Peripheral Soundscape; Creekside Soundscape; Active Residential Soundscape; and Detached Residential Soundscape.
1) Peripheral Soundscape

The roar of traffic dominates the local soundscapes of six residents whose apartments overlook the major routeways that ring the Creek. As in Commercial Drive, these residents are critical of traffic sounds, although once again they betrayed deeper feelings of resignation and powerlessness. An anonymity pervades these residents' soundscapes. Variations in traffic volumes aside, these residents pay little attention to this cacophony, although the four who live in the western half of the community occasionally hear the local False Creek bus pass by. As Larry, whose apartment overlooks Lamey's Mill Road, and faces the Granville Street Bridge sliproads, wryly comments: "What's there to listen to?"

Aside from traffic, these residents hear few other sounds. The people-sounds they do hear are often "unwanted noise" from adjacent apartments, a product of the "cheap construction" of individual buildings, and the lack of adequate soundproofing between suites. Two sounds that rise above "the din" are those of helicopters and emergency vehicle sirens. Neither the "noisy", "irritating" and "grating" sounds of helicopters, nor the rumble of jet aircraft overhead add any quality to residents' soundscapes, however, and they are viewed with the same disdain reserved for traffic noise. The wail of emergency sirens from ambulances heading to the Vancouver General Hospital is similarly considered an invasive and "disturbing" sound.

The soundscapes of these six residents are "bleak" and suggestive of an acoustic alienation from the major portions of the community arranged along the waterfront. The southern aspect of residents' homes and their proximity to the major routeways which surround the Creek result in local acoustic worlds dominated by traffic sounds. Indeed, individual residents describe themselves as being on the "outside looking out".
2) Creekside Soundscape

A residential waterfront orientation lies at the basis of the acoustic experiences of nine residents. The foreground or attention-getting sounds of small boats coming and going, as well as the ambient sounds of aluminum boat masts "clinking" on moored vessels are basic elements of these residents' soundscapes. In addition, voices and music from the pub and restaurant by Stamp's Landing form unwelcome acoustic events for Heather residents. The late evening occurrence of these latter sounds disturbs residents.

People and activity sounds from the seawall form pervasive soundscape elements for residents in the western half of the Creek, while the distinctive sounds of drumming and chanting from the dragon boat crews and activity sounds from the Granville Island Recreational Centre add interest. The cry of seagulls reinforce the waterfront focus of these residents' soundscapes.

While waterfront and recreational sounds dominate these residents' soundscapes, a smaller array of other sounds challenge this orientation. Thus, the rumble of traffic from the Granville Street Bridge to the west and the downtown core to the north both raise ambient sound levels along the waterfront. For some residents, however, these traffic sounds are a substantial improvement on their past experiences in other city locations or neighbourhoods - especially those close to the downtown core. A second acoustic "challenge" comes from the cement plant on Granville Island with its characteristic low hum or rumble. Indeed, residents whose homes are adjacent to the waterfront, cite its weekend absence as a "relief".

Overall, these residents have positive impressions of local sounds, one that contrasts sharply with those of 'back' residents. For these residents the acoustic environments of their local areas are for the most part consistent with their broader conceptualization of the community in recreational or social terms.
Unique local sounds such as those of the dragon boats and music from summer festivals in Sutcliffe Park reflect the dynamic and innovative character of False Creek. Residents consider such sounds unlikely to be heard elsewhere. While residents thus stress the individuality of False Creek, its broader links to Vancouver are echoed in the numerous sounds heard "from across the inlet": the rumble of traffic flows from the north shore of the Creek, train whistles and engine sounds from the rolling yards to the east, the noon blast of the O Canada Horn from atop the BC Hydro building and the mournful call of foghorns from Burrard Inlet.

3) Active Residential Soundscape

For a third group their dominant acoustic experience of place centres upon the everyday activities of their local area. Of the six residents whose soundscapes retain this orientation, four live in the Spruce Neighbourhood close to the school, and two in Heather, next to the park.

Spruce residents regularly hear children's and adults' voices from the school and playing fields to the east of their home environments, the sound of neighbours coming and going, and those of city crews cleaning and maintaining the numerous flower beds and grassed areas. For Heather residents the sound of children's voices is replaced by that of residents out walking their dogs and visiting in the small enclaves that form part of the local area, the sound of cars arriving for meetings at the local community centre and the weekday arrival of the mobile book bus. While the local sounds in each neighbourhood vary, the low ambient sound levels in both are a feature residents appreciate. The absence of local traffic emphasizes the residential character of these local soundscapes while natural sounds confirm it, with geese flying overhead, birds singing in sheltered passageways, and leaves blowing gently in local breezes.
Three of the residents whose soundscapes retain this everyday residential orientation are homemakers and mothers with young children, while three work either part-time or full-time outside of the home. The three homemakers spend large portions of the day in the immediate environs of their homes. This closeness to home is reflected in their detailed descriptions of the local sounds they hear on a regular basis. The regular movements of pedestrians outside of their homes, as well as the daily trips of other mothers bringing their children to and from school each have their own distinctive sounds that are known and listened out for. In contrast, residents who work full-time or part-time outside of the home hear more early morning and early evening sounds.

For all six residents, however, their acoustic experience of place centres largely on small-scale idiosyncratic local sounds, the sound of neighbours' wind chimes or that of a neighbour's clock striking, which form part of the routines of daily life. While sounds do periodically filter in to these local acoustic worlds from outside places such as those of middle distance traffic sounds from the Granville Street Bridge and downtown periphery, these are relegated to a background role. Residents' acoustic focus is on their local streetscapes.

4) Detached Residential Soundscape

The soundscapes of five Heather residents, who all live in the most recently completed phase of the Creek, reflect their fundamental detachment from the local neighbourhood around them. These residents consider most of the sounds they hear intrusive or invasive. Construction sounds from the continued building taking place on the northeastern margins of the community, the late evening sounds of traffic on Moberly Road and Commodore Road, as well as the overhead sounds of jet aircraft all sound out much to the ire of residents.

The barrenness of these residents' soundscapes is linked to their place of
residence and the nature of their daily routines. All five live in high-rise units, three above the fifth floor. As a result their contact with street level acoustic environments is limited. Of the sounds they do hear, it is the repetitive, redundant daytime ambience of hammering and drilling from nearby construction activities which stand out. The associated dust and fumes are a further "headache".

The weakly defined local soundscapes of these residents are compounded by the nature of their daily routines. Four spend the majority of each weekday at work away from the local area. For these residents the weekday soundscape of the eastern periphery of the Creek is thus largely unknown. The fifth, a retiree, spends most of her day within the confines of her small one bedroom apartment, while her routines centre upon the television, and to a lesser extent the radio. The loud sounds from both of these isolate her from the local neighbourhood outside.

While the soundscapes of these residents are thus weakly defined, they do not consider the relative absence of local sounds a loss. Although they are critical of construction sounds and local traffic flows, the paucity of their local acoustic environments is more than compensated for by the "super views" of downtown and Vancouver's "east and west side". Indeed, in choosing their current homes, several were attracted by the picturesque views from their high rise suites. As Leon, one of these residents, comments: "It'll be fine when they've finished building ... We'll still be able to see the downtown and mountains."

7.6.3 Ambleside Soundscapes

The twenty-eight Ambleside residents hear a variety of local sounds in much the same way Commercial Drive and False Creek residents do.
Twenty-eight hear traffic sounds, twenty-six the sound of birds, twenty-seven the train sounds and twenty-five the buzz of seaplanes. Within these broad keynotes, the acoustic experiences of individual residents once again reflect the individuality of their place of residence, the idiosyncracies of their daily routines and the variations in their listening habits. Although the above keynote sounds form a basic component of most residents' soundscapes, the emphasis individual residents placed on particular sounds differs, while their acoustic experiences are further augmented by smaller, more idiosyncratic sounds that personalize their acoustic experience of place.

The acoustic experiences of residents whose homes (houses or apartments) overlook or front onto the Burrard Inlet, are different from those who live close to one of the major local thoroughfares, and different again from those whose homes lie away from the busy streets that criss-cross the area and the straggling business core along Marine Drive, and whose daily routines unfold outside of the neighbourhood. Three dominant acoustic senses of place are evident, which form an integral component of residents' local lives and experiences: Village by the Sea Soundscape; Changing Residential Soundscape; and North Shore Suburban Soundscape.

1) Village by the Sea Soundscape

The soundscapes of five residents, who all live close to the Burrard Inlet, focus on the waterfront or oceanside characteristics of the neighbourhood. As an extension of this acoustic character, two further residents, who live close to Memorial Park, describe their local soundscapes as reminiscent of a "village" or "rural setting". The dominant acoustic sense of place for these residents thus centres on the oceanside, or village character of Ambleside.

The common sounds they hear include those of birds (especially seagulls,
but also songbirds and crows), the roll of surf, the rushing and swirling of the wind, and gentle to heavy timpany of rain, boats from the inlet, foghorns, and the frequent sounds of seaplanes overhead. While the sounds individual residents hear varies, for example, bird sounds in their own garden or that of the neighbour's dog barking, their individual acoustic experiences are linked through the above keynote sounds which confirm Ambleside's waterfront or oceanside character.

Residents whose homes front directly onto the waterfront or seawall commonly hear the sounds of the wind, the ocean and seagulls, with the sounds of smaller boats and recreational craft a feature of summer months. The voices and activity sounds of pedestrians and joggers on the seawall, and the sounds of children playing in John Lawson Park and on the beach also sound out, giving the waterfront a human as well as a natural flavour. Those who live by Memorial Park hear less of these human sounds, with a greater emphasis on the natural sounds of birds, the wind and the rain. Further, it is in these western margins that most of the residents who have dogs live. The sound of individual barking dogs thus often sounds out.

All seven residents consider part of the Ambleside's "beauty" and "charm" its peace and quiet. They relate the latter to the general absence of local traffic flows, which contrasts with the busy nature of Marine Drive. While traffic sounds are largely absent, even these residents cannot escape them. Indeed, the ambient rumble from the Lions Gate Bridge continues to rise and cover a greater and greater portion of the north shore. Additional local sounds within these residents' 'village by the sea' soundscapes include those of seaplanes and trains. While both sound out against the more ambient presence of natural sounds, they are largely accepted. Indeed, some residents link them to Ambleside's past, and hence do not consider them obviously 'out of place'.
Overall, the ocean or small village character of these seven residents' soundscapes is consistent with their broader conceptualization of the neighbourhood as a small centre, protected in part from the larger developments taking place around it. Indeed, each resident has lived in the area for an extended period of time, and all consider the oceanside location and small village character of Ambleside important elements of its character and appeal. For most the core of their daily routines unfold close to their homes in their beloved Ambleside.

2) Changing Residential Soundscape

The dominant acoustic experiences of a second group of eight residents reflect the changing physical and social nature of Ambleside. These residents are also all long time residents. The major sounds they hear are from traffic on the major local roadways of Marine Drive, Fourteenth Street, Fifteenth Street, Seventeenth Street and Bellevue Avenue. In addition to these "annoying" and "noisy" traffic sounds, residents also hear the hammering and banging from construction projects associated with the widening of local roads, the demolition and replacement of single-family homes and the construction of high-rise apartment and condominium structures.

As a group they are critical of many of the sounds they hear, which they consider "not to belong" in "a residential area like this." This acoustic contradiction is grounded in their broader view of Ambleside as a former "quiet residential", or "small village community" which has undergone, and continues to undergo, considerable change. The specific sounds which emphasize these changes include increased levels of traffic sounds, the result of heavier traffic flows on Marine Drive and other local streets, as well as a rise in the number of emergency vehicle sirens.
Similarly, local construction sounds emphasize change in the local built environment, much of which long-time residents disapprove of: "they rip down jolly decent homes . . . and put up monsters", "there's too many apartments now . . . we've lost our view", as well as changes in the area's social profile and population density: "a lot of long time residents have sold up and moved out", "it's not the same anymore . . . families and people on pensions can't afford it anymore", "there's more traffic everywhere . . . it's hard to park sometimes."

While changes in the area's physical structure and social profile are, thus, echoed in the increased volume and density of traffic and construction sounds, residents also consider other local sounds to have faded from earshot. The loss of children's voices is symptomatic for two residents of the area's changing social structure, with an erosion of the "family part of the neighbourhood."

Similarly, the loss of natural sounds, particularly those of birds and birdsong, from local streets, is considered a direct result of "them chopping down trees . . . for bigger houses", and "lots more cars."

The eight residents whose local acoustic soundscapes echo the flux they see and feel around them in the community, link change itself with noise. These residents find some solace, however, in the small number of enduring local keynote sounds: the sound of the birds singing in the chestnut trees on Seventeenth Street, the sounds of the Royal Hudson, and the distant chime of the bells from St. Christopher's. For individual residents each of these sounds is both local and nostalgic, and symbolizes an Ambleside of the past that is slipping away gradually with the loss of houses and families, and fading away with the loss of smaller more intimate local sounds amid rising sound levels.

3) North Shore Suburban Soundscape

The final dominant acoustic experience of place for Ambleside residents is
that of a north shore suburban setting. These resident soundscapes are the most
diverse, although a series of common sounds and acoustic experiences once
again links them. Traffic sounds, for example, are basic to all of these residents'
soundscapes, although they are not "overwhelming", but rather more a matter of
fact, and "part of community life". While residents thus express some anger or
frustration with local traffic sounds, their focus is on specific sounds that annoy
or frighten them for short periods of time, and not on a broader cacophony from
which they feel no respite.

The daily sounds of the local train as well as those of the frequent passage
of seaplanes overhead also figure in the soundscapes of these residents, although
generally not in detail. The physical distance of these residents' homes from the
rail lines contributes to their positive impressions of these sounds, although they
are critical of the buzz from seaplanes given their frequent occurrence. Once
again the characteristic summer sounds of the Royal Hudson form a distinctive
local soundmark.

The north shore suburban quality of Ambleside is emphasized in the large
number of natural sounds these residents include in their local soundscapes.
Common natural sounds they hear include those of birds, the wind, rain and the
ocean. The sounds of local streams and squirrels are heard by a smaller number
of residents, but serve to add a more personal or intimate nature to resident
acoustic worlds. Residents have positive feelings toward most natural sounds,
and consider them integral components of the north shore with its predominantly
suburban character. Indeed, the continued presence of natural sounds reinforces
residents' conceptualizations of Ambleside in these terms, despite the related
threats of increased traffic flows and ongoing development.
7.7 A Concluding Word: 'What is the Sound of This Place?'

The acoustic portraits presented in Chapter Five and the acoustic experiences of local residents outlined in Chapter Six both pointed to the complexity of worlds of sound and the subsequent human interpretation of them. In each of the three study areas a fluid array of sounds come and go at any one time with a myriad of different rhythms, intensities, durations, tones, and timbres. The human experience of these is premised not on the basis of the simple reception of a signal or the detection of a stimulus, but rather on the negotiated interaction of a response.

The aim of the current chapter has been to provide a framework for an understanding of such a response specifically as it relates to local residents' response to the everyday places in which they live. While the initial portion of the chapter has outlined the varied dimensions and structures of residents' acoustic experience of place, the latter half has presented a summary of the dominant acoustic impressions or senses of place local residents have of the three study areas. From the comparative complexity and confusion of the data some sense of order has been established. Thus, in much the same way as individual residents make sense of the complex whole of sounds that surround them, some sense has in turn been made of their acoustic experiences of place. By abstracting from the individual experiences of local residents, and drawing on a first hand knowledge of local acoustic environments developed through their empirical 'sensing' and measurement, a framework for understanding the human acoustic experience of place has been outlined. While clearly there are still many questions to be answered, a start has been made.
Chapter Eight: Conclusions

8.1 Introduction

The central aim of this research has been to explore the acoustic experience of place, drawing on the everyday acoustic experiences of local residents living in the three Vancouver area neighbourhoods of Commercial Drive, False Creek and Ambleside. The major research question asked was in what sense is sound involved in local residents' understanding of and attachment to the places in which they live, and possibly spend the majority of their daily lives outside of work? Through this specific focus the study pursues what has become one of the cornerstones of humanistic geographic inquiry, namely, the quest for a greater understanding of the manner in which people experience and relate to the everyday places that form the geographic basis of their daily lives. Despite the varied innovations of transportation and communication systems, most people still live out their everyday lives in an array of localized places which become infused with feelings, memories and meanings based on familiarity and the routines of daily life. Of these places, the local area in which people live forms the basic centre, and a place of meaning to which they may feel either attached or from which they may feel alienated.

As a result of the routine nature of much of daily life, residents do not, for the most part, ponder the constituent elements of their local worlds, nor think about the different ways in which they experience, interpret and ultimately make sense of them. Everyday life, and the places in which it unfolds, are part of the broader taken-for-granted reality which provides the unquestionable background of meaning for the individual. Through their everyday lives people build, maintain and reconstruct the very definitions, rules and motivations which shape their actions. It is, therefore, the world of experience which, through
self-awareness, residents see as both being under their own control, and yet at the same time shaped and even determined by forces and events outside of that control. While the constraints of economic and social values cannot be overlooked at the level of consciousness, it is important to recognize that individuals actively mould and creatively transform themselves, and that these constructions and reconstructions are firmly rooted in an experience of everyday life which in turn results in different ways of seeing, hearing and acting in the world. Such an argument clearly emphasizes the importance of place in everyday life given the context-specific nature of the relationships that unfold, and their subsequent impact on the habits and routines of much of daily life.

Within the geographic literature, much humanistic research focusses on place as a meaningful existential category. Drawing on the varied theory and approaches of phenomenology and existential philosophy, humanistic geographers variously conceptualize place as being of intrinsic importance. They see place as a centre of felt value, which incarnates the experiences and aspirations of the people who live there. Thus, it is not only a setting for everyday life - that is its geographical or spatial coordinates - but it is also an integral component of the meaning of this life. To be attached to place is seen as a fundamental human need and, particularly in terms of home, as the foundation of self and identity. Places, thus, represent profound centres of human existence, and not only contribute to a sense of well-being, but may also result in feelings of entrapment, isolation and even despair.

Although geographers have explored place from an existential perspective, the concrete experiences of people living out their everyday lives in specific places remains a neglected area of geographic inquiry. While people's everyday lives are clearly acknowledged as set in localized places and to a certain degree shaped and influenced by them, as places become infused with feelings,
memories and meanings, there is still a limited understanding of the varied
dimensions of the human association with and attachment to these fundamental
elements of daily life.

Recent geographical articles provide some preliminary insights into the
varied dimensions of the human experience of different places, with three
interrelated dimensions identified: the perceptual realm of awareness, attitudes
and memories; the emotional realm of feelings, preferences and values; and the
experiential realm of bodily and sensory contacts (Seamon, 1989; Seamon and
Mugerauer, 1985; Porteous, 1990). Despite progress in this research, however,
many facets of this complex array of linkages remain incompletely understood,
including that of the acoustic. While the world is clearly full of sound, and
acoustic experience is an integral component of the sense and experience of
different places, the precise structure or nature of the relationships involved is
unclear.

8.2 The Acoustic Experience of Place

The exploration of residents' acoustic experiences within the current study
quickly revealed the subconscious and habitual nature of much of daily life, and
the sense or experience of life in different places. Residents' experiences of their
daily lives and routines were commonly presented in their holistic nature as a
vibrant array of varied sensations, emotions and sensibilities within a state of
flux. For individual residents, the task of recovering one facet of this experience,
namely the acoustic, was therefore a testing and often a difficult one. This is
quite to be expected. After all, people must make sense of their lives as wholes,
and become accustomed to and adept at understanding this whole as a
multi-sensory set of relations. Indeed, so accustomed are they at understanding
and interpreting this whole, that it is when some aspect of this whole is singled
out for special study that difficulties of analysis and demarcation result.

As a second challenge residents faced the problem of verbalizing their acoustic experiences, many of which are not easily described. The limits of language in conveying a narrative or summarizing a changing situation, as opposed to describing a static scene, were clearly reflected in the efforts of individual residents to describe the sounds they hear on a regular basis and the patterns and rhythms they express. In describing their acoustic experiences residents thus encountered two related challenges: first the inappropriateness of much everyday language to describe and articulate acoustic experiences, and second, the general malaise of modern acoustic environments reflected in residents' socialization to consider sounds as noise and by extension noise as 'bad'.

In terms of the basic structures and dimensions of residents' acoustic experiences of the places they live in, the following major elements may be briefly identified. These in turn provide a framework for the description of the dominant acoustic senses of place of residents in the three study areas.

8.2.1 The Structure and Nature of Acoustic Experience

Difficulties in expression aside, the major structures that underlay residents' acoustic experience of their local neighbourhoods were two-fold: first, its essentially temporal nature; and second, the isolation of specific sounds or sequences of sound as the building blocks of local experience. Residents' acoustic impressions of their local neighbourhoods were underpinned by a temporal flux and change. Individual sounds were considered to 'come and go', with local acoustic environments in a constant state of flux. While the visual elements of residents' local streetscapes were thus encountered on the basis of the juxtaposition of stable objects that defined space, the key facet of the
accompanying acoustic dimension was its flux and change with the presence of permanent or stable sounds being the exception rather than the rule.

Within this flux and change, it was residents' identification of recurrent patterns or sequences of change and their comparison to previously heard and cognitively processed sounds which provided the basis for order and meaning. Residents' acoustic 'impressions' of their local neighbourhoods were underpinned by the explicit identification of recurrent patterns or sequences of sounds which they associated with a particular context and set of situational constraints common to their local place. As an integral dimension of this identification of specific sounds and sequences of sound, residents routinely isolated individual 'streams' of sound that literally 'sounded out' from the rich ambience of background sounds. Residents' acoustic experiences of the individual places through which they continually moved on an ongoing basis were thus shaped by sounds' rich spatiality which intruded upon their consciousness.

The sounds residents heard and recalled from this all-surrounding acoustic environment were those that attracted their attention or interest and which 'sounded out' against the backdrop of other sounds present. In sorting through this vibrant, fluid array of sounds, residents identified individual sounds on the basis of their temporal, power, pitch or semantic properties. Residents' acoustic experience of individual places was, thus, shaped by the pervasive flood of sounds that periodically invaded their consciousness from all sides and from a variety of distances.

As a second key facet of their acoustic experiences, residents routinely 'broke' the rich complex of surrounding sound into its varied components. Residents thus understood the totality of local acoustic environments as a complex melange of interrelated sounds associated with the daily flow of local
events and activities. This 'routine' skill of residents is consistent with Truax's (1984) concept of "soundscape competence" and Bregman's (1978; 1990) focus on the isolation of acoustic "streams". Summarized briefly, soundscape competence is residents' fundamental knowledge of the structure and meaning of environmental sound, and is similar to notions of linguistic and musical competence. Bregman's (1978; 1990) "streams" refer to the 'sense' the individual listener makes out of the complex array of sounds that characterize any environment through dividing it up into its component parts. Thus through the use of generic rules which match Truax's soundscape competence, residents discern possible relationships within complex acoustic environments, while through 'non-generic' rules, based on personal experiences in individual contexts, they become familiar with the varied sounds of particular events or activities in specific settings. Across all three study areas residents readily used both sets of 'rules' (or skills) to make sense of the continually changing acoustic worlds around them.

While residents' daily acoustic experiences of local places were thus shaped by these underlying structures, they were further arranged across four interrelated dimensions: sound as context; sound as information; sound and feeling; and sound and memory.

The acoustic orientation of residents to the local events and activities that unfold around them was characterized by both an implicit and explicit awareness of local sounds. Indeed, over time residents' awareness of local sounds commonly became implicit rather explicit. Thus, in negotiating the complex acoustic environments of their local streets residents relied on a type of 'automatic pilot' to orient themselves. This implicit dimension of acoustic experience (sound as context) is consistent with Truax's (1984) concept of "background listening". Despite the implicit nature of this awareness, through
specific cues given during interviews, residents were able to recall some of these common daily sounds. Residents' implicit awareness of local sounds as a context for daily life is significant, given that many of the sounds habitually heard are the fundamental acoustic elements of their local places given their "usual occurrence".

At a second level, residents' acoustic experience of place involved the more deliberate or conscious identification of individual sounds, and the associated gathering of information from them. In their descriptions of their local acoustic worlds, residents thus outlined a variety of specific sounds which they associated with events or activities of some relevance to them.

This conscious or explicit awareness of local sounds varied in its focus and detail with two basic levels: the general and the specific. At a general level, residents offered summaries of the form or structure of different local acoustic environments, based on the broad categories of individual sounds they heard there. At a second, more specific level, however, residents demonstrated a more detailed awareness of sounds or sound sequences from particular events or activities which they listened out for on a regular basis.

As a third dimension of experience, residents commonly imbued specific sounds with a meaning or sentiment that elevated them above their role as contexts or information. While some residents found it difficult to describe their own feelings toward specific sounds, others were able to do so. These feelings in turn varied both in their structure and form. Some were brief, context-specific and fleeting, while others were more permanent and all-encompassing. Indeed, the latter added a deeper quality to resident interactions with the world around them. This affective dimension of residents' acoustic experience extended to include a mnemonic component, which linked individual sounds to past times and places, and thus imbued the local acoustic environment with a greater depth.
of meaning and significance that extended far beyond the physical characteristics of the sounds themselves.

While residents' acoustic experiences were arranged across these four dimensions, they also retained a further hierarchical structure that closely matched their varied activities in, and commitments to, local places. Residents' knowledge and awareness of local sounds echoed their habitual patterns of movement and activity, as well as their varying degree of commitment to the individual places linked together as part of their daily worlds. Thus, it was residents' home spaces, those in and around their home base, which they more closely acoustically perused, better knew and even defended. Conversely, less frequently visited spaces or places were not acoustically known. Residents' acoustic experience of place, therefore, closely matched their "fields of care" or "networks of personal concern", and thus reinforced the identity and value of both.

8.2.3 The Dominant Acoustic Senses of Place

Within each of the three study areas local residents' dominant acoustic senses of place echoed the variety and detail of their own individual dialogues with local neighbourhood spaces. Commercial Drive residents' soundscapes were underpinned by the major keynote sounds of traffic, other transportation systems, businesses on the Drive, people on the Drive, and the natural sounds from residential streets. A broad distinction was clearly apparent between the soundscapes of those residents who live on the busy main Drive, and those who live on one of the more sheltered residential side streets. On the basis of this broad distinction three dominant acoustic senses of place could be identified: 'a busy thoroughfare soundscape', 'a cosmopolitan social soundscape', and an 'older suburban soundscape'.
The dominant sounds heard by the eight residents who live on or adjacent to one of the major thoroughfares that cross the neighbourhood are those from heavy traffic flows. Variously described as a "wall of noise" and a "noisy din", residents face a largely anonymous, repetitive, high intensity roar that drowns out other smaller sounds. A general mood of resignation or apathy subsumes these residents caught within this all-encompassing and alienating soundscape. For seven other residents it is the distinctive array of music, people and activity sounds from the traditional shopping core, as well as varied daytime and evening sounds from Grandview Park which form the dominant features of their local soundscapes. In concert, this eclectic mix of sounds contributes to a dominant acoustic experience of place that reflects the social and cosmopolitan character of the neighbourhood. Finally, the dominant soundscapes of eleven residents who live on residential side streets off the Drive, include the ambient sounds of birds singing, neighbours out walking or at work in their yards, barking dogs and the voices of children playing. The result is a dominant acoustic sense of the neighbourhood as a older suburban setting.

Resident soundscapes in False Creek reflect the basic division between 'front' and 'back' residents that characterizes the community as a whole. While front residents' homes look out over the Creek, those of back residents face the busy thoroughfares that surround the community. Four dominant acoustic experiences of place emerge: peripheral soundscape; creekside soundscape; active residential soundscape and detached residential soundscape. The broad-band roar of heavy traffic flows bombard residents who live on the perimeter of the development, and whose homes face one or more of the busy routeways that encircle the site. As with residents who live on the Drive in the Commercial Drive area, these residents find this continual 'noise' a largely anonymous nuisance. Their dominant acoustic sense of place is one devoid of
form and meaning; indeed, their acoustic sense is that of being on the "outside looking out".

By comparison, the dominant acoustic experiences of 'front' residents focus on the varied waterfront sounds from the two marina sites, the seawall and the distant rumble of traffic. In many ways, however, the acoustic experience of place of these residents is one of contrasts, as the textured and fluctuating sounds of the marinas and waterfront unfold against the low ambient rumble of distant traffic flows. For a third group of residents divided between the Spruce and Heather neighbourhoods, the local sounds of children playing, of pedestrians and neighbours out walking, and of city crews at work repairing and maintaining the local built environment 'sound out'. The result is an active local residential soundscape, which residents use to connect them with the wider world around them. Finally, five residents in the Heather neighbourhood are essentially detached from their local soundscapes. The high rise nature of their individual homes leaves them isolated from the outside world, entrapped within an internal space of concrete and glass. The local sounds that stand out for these residents are those from local construction projects, which further their sense of isolation or detachment. The absence of a vibrant local acoustic environment is in large part 'replaced' for these residents by the "super views" of the downtown and surrounding neighbourhoods, although the associated loss of intimacy and physical attachment associated with acoustic experiences is not easily overcome.

The dominant acoustic senses of place of Ambleside residents once again reflect the location of their homes, as well as their involvements in local activities and spaces. Three dominant acoustic sense of place emerge: a village by the sea soundscape; a changing neighbourhood soundscape; and a quiet north shore suburban soundscape. The soundscapes of the residents who live close to the waterfront, and on the western periphery of the neighbourhood by Memorial
Park, reflect the park-like setting of their local worlds. The sounds these residents hear reflect Ambleside's village character of the past: the natural sounds of birds singing, the ocean, local streams and barking dogs. An unwelcome addition to this 'quiet', almost 'rural' soundscape is the background rumble of distant traffic sounds, which threatens the natural and peaceful quality of local acoustic worlds.

The dominant sounds for a second group of eight long-time residents reflect recent physical and social changes in the neighbourhood. Construction sounds, increased traffic flows, and the loss of children's voices are all symptomatic of change, change that individual residents find disconcerting and a threat to their former impressions of the neighbourhood. The final acoustic sense of place is that of Ambleside as a north shore suburb. As part of this dominant soundscape, residents identify the steady traffic flows that typify Marine Drive and the major north-south streets, as well as a flourish of natural sounds. Added to these core elements of residents' acoustic experiences are the characteristic buzz of the seaplanes, as well as more local sounds from individual events and activities.

Across all three of the study areas, these dominant acoustic experiences of place reflect both the variety of local acoustic worlds, as well as the individual routines, listening habits and acoustic sensibilities of local residents. As the dominant acoustic impressions of local residents, these soundscapes provide fundamental insights into local residents' understandings of and attachments to their local places.

8.3 New Research Directions: Old Problems

Through its exploration of the acoustic experience of place, this study contributes in small part to the continued geographic quest for a greater
understanding of the manner in which people relate to and understand the places that form the geographic basis of their daily worlds. From this perspective, one major conclusion of the current study must be that the nature of place and the human experience of place is far more subtle, complex and multidimensional than either conventional positivist or even structural portraits suggest.

The human experience of the everyday places that form the basis of people's daily lives includes basic perceptual sensations, bodily sensibilities and heightened styles of refined awareness and understanding influenced by thought and belief structures. In much the same way, places are multifaceted in their character and project a rich array of interrelated worlds that extend from often tangible or sense data to the less visible or discernible, but nevertheless essential qualities of atmosphere, spirit and even sacredness.

The human experience of places is complex and still only partly understood. While the current study with its explicit focus on the role of sound addresses this lack of understanding in part, much additional work is needed before a complete understanding of the acoustic experience of place will result. While the major findings of this study represent only the beginning of inquiry, they nevertheless provide some important insights into the role of sound in the experience of real-life places.

In addition to its discussion of the basic structures and dimensions of acoustic experience, the research also provides some insights into the current acoustic experience of residents living in three places. As detailed in Chapter Seven, acoustic experience is predicated upon the isolation and identification of meaningful patterns or sequences of sound from all-encompassing local acoustic environments. Once identified, these in turn provide a physical and dynamic contact with the outside world. The acoustic environment changes rapidly over both time and space, with new sounds continually emerging and then fading
from earshot as part of a constant flux. The sounds individual residents associate with particular places are those that are uniquely related to a place's local activities and events, and which gain meaning on the basis of the specific context or situational constraints in which they are set.

The timeful quality of sound within any context gives structure to space. The same physical space assumes a vastly different character as the sounds there wax and wane. A busy city street during the height of the rush-hour is acoustically oppressive and alienating. Any sense of acoustic space or volume subsides as high intensity foreground sounds literally crowd the listener, resulting in what Truax (1984) refers to as "aural claustrophobia". Early on Sunday morning the same physical space takes on a completely different character a product in large part of changes in the local acoustic environment. A variety of sounds is once again audible from the intimate and close sounds of one's footsteps to the distant sound of a dog barking five blocks away.

In most studies of place, and the human experience of place, geographers, in much the same manner as other social scientists, have focussed on the visual dimension to the relative exclusion of the other senses. As places are intimate centres of personal value, meaning and affection, it may be reasonably argued that the study of residents' interactions with and attachments to the places that form the basis of their daily lives demands a much broader frame of reference and understanding than that afforded by a focus on the visual dimension alone. Rather, the multidimensional nature of people's relationships with place must be the focus of study since it is not only vision and hearing which structure people's interactions with the places in which they live, work and spend their leisure time, but all of their senses in concert.

The current study adds to the small body of soundscape literature, and reveals some more of the many facets of the acoustic dimension of human
experience. The results clearly emphasize the fundamental role of sound in residents' experience of place. Indeed, without sound places take on a surreal perspective losing their definition, identity and most importantly their sense of life. At a basic level it is sound which gives places life. The temporal nature of sound provides a vital connection between the past, present and the future, giving places their inherent continuity in human experience and daily life. Residents' acoustic experiences of the places in which they live and spend their daily lives are part of the broader relations they develop with the everyday world around them. Sound in this manner mediates the relationships between people and places. The relations may be interactive and affective, but they may also become physically alienating or oppressive. In either case, sound forms an integral dimension of people-place interactions.

8.3.1 Recommendations for Future Research

The current study has succeeded in providing some important insights into the role of sound in the human experience of place, a contribution that benefits both the fields of geographic and acoustic study. That said, there is much further research needed before a more complete understanding of the complexity of human acoustic experience will result and the fundamental role of sound in people-place relationships be fully comprehended.

As a starting point, the focus of the current research on the acoustic experiences of 80 local residents who live in three Vancouver area neighbourhoods needs to be expanded upon. The experiences of many more residents who live in a variety of different places under a varied array of different circumstances need to be explored to add to the preliminary understandings forged within the current study. This broader exploration of local residents' acoustic experiences of their local places may be usefully structured to
consider the impact of specific elements on residents' soundscapes such as their length of residence in a local neighbourhood and the nature and design of their home environment.

In the current study, long time residents in all three study areas frequently offered rich and detailed descriptions of their local acoustic environments with individual sounds recalled with affection. These residents' extended periods of involvement in their local areas were echoed in their often detailed descriptions of local sounds which formed an important dimension of their daily lives and routines. Conversely, newly arrived residents in each of the three neighbourhoods commonly made much less sense of the complex local acoustic environments they encountered. Daily, weekly, seasonal or even annual acoustic rhythms were largely unknown to them, as were the nuances of many local sounds. Indeed, because of their dynamic and fluid nature it seems that the sounds of a given place only become familiar after an extended period of residence. Quite how this familiarity develops and evolves, and the varied levels of knowledge or awareness that it includes, however, is unclear. To address these and other questions longitudinal studies of residents' emerging acoustic senses of place are needed.

Morphologically, the links between the structure and nature of residents' home environments and their resultant soundscapes also requires further review. Specifically, one starting point based on the current study may be an exploration of the varied factors shaping the detached soundscapes of residents living in high-rise apartments. The dominant vertical orientation of modern urban environments suggests an inevitable physical separation of residents from the daily patterns and flow of local neighbourhood life. Within the current study, this detachment was expressed specifically in acoustic terms, with the concrete and glass 'cocoons' of high rise dwellers in both False Creek and Ambleside
separating them from the acoustic world outside. Commercial Drive residents, by contrast, the majority of who live in single-family style dwellings, experienced a much greater level of contact with their local acoustic environments. A detailed study of the impact of specific housing structures on residents' acoustic experiences would yield more answers, as would a more encompassing study of the increased verticality of urban environments and its effect on everyday urban dwelling.

In a similar vein, the replacement of interactive street or local soundscapes by media-based, reception-oriented and mass-produced soundscapes is a further research area worthy of more detailed study. The increased separation of urban residents from their local contexts through changes in built environments, as well as the increase in electronic means of communication, has a parallel in the substitution of media-formed, 'artificial' soundscapes for 'real' everyday ones. The broader links between such changes and place experiences themselves (authentic versus non-authentic, to use Relph's (1976) terms) present intriguing research questions indeed.

Finally, future place studies will benefit from a consideration of the multidimensional nature of everyday experience and interaction. Although the focus of place studies has shifted considerably with the emergence of geographical humanism and turned to an examination of the everyday experiences of local residents as they live their daily lives, the multidimensional nature of these experiences has not been fully considered. Within such a research framework, residents' acoustic experiences would be only one of the numerous dimensions of resident place experiences explored. Indeed, the final outcome may include a linking of the varied experiences together suggesting something of the complex nature of people-place relationships.
8.3.2 Problems in Acoustic Research

While numerous facets of sound and place relationships require further study common problems of method and research design remain. As a pioneering study, the current research encountered some of these problems which were overcome to a greater or lesser extent. As a starting point, the very capture of acoustic environments for description and analysis is still problematic, although progress continues to be made. The field methods of the WSP have proven useful in the small number of studies that have examined soundscapes, the current study included. That said, written summaries or physical measurements of acoustic environments can only convey a limited impression of their complex and dynamic nature. Field tape recordings are one reliable method of overcoming these challenges. Such recordings may indeed be presented in conjunction with traditional monograph materials and included as part of any final documents produced.

In terms of residents' soundscapes themselves, additional problems still hinder the design of categorizations and classification systems for sounds. Objective classifications of sounds on the basis of their intensities, frequencies and patterns of change do not fit well with respondents' subjective interpretations of these same sounds on the basis of their meanings, or the information they provide listeners (Schafer, 1977a; Truax, 1984). WSP conceptually formed sound groupings based primarily on sound sources do, however, provide a useful starting point for both the research process and the presentation of results and findings. While these categories do not stand up to rigorous statistical analysis on the basis of intensity or frequency (Porteous and Mastin, 1985), this may reflect more the inappropriateness of such quantitative methods of analysis than the value of the categories themselves. As a basis for the discussion of residents' acoustic experiences such categories have a certain
'face validity' for both the researcher, respondent and reader that draws on a common language and understanding.

In addition to problems of description and categorization, a third problem that confronts any researcher of soundscapes is that of language. Much common speech, and by extension academic discourse, retains a visual bias. The use of visual analogies and metaphors to define or explain acoustic phenomena or relationships complicates their ready expression and definition. While completing avoiding the use of all visual expressions is not feasible, a substantive reliance upon them is best avoided.

A fourth problem is that of talking to respondents about their acoustic experiences. Language difficulties aside, acoustic experiences are difficult to communicate in verbal or written form because of their basis in cognitive processes of pattern recognition. Respondents have no need to summarize these gestalt-like experiences in everyday life and hence find it difficult to do so when specifically asked. Within the current study some of these challenges in expressing acoustic experiences were overcome through using tape recordings of common local sounds. In identifying these sounds, and in some of their comments about them, residents drew on the same cognitive processes they use on a daily basis to recognize and interpret sounds. Even though only a limited use was made of tape recordings their value in soundscape research was confirmed suggesting the need to incorporate them to a much further extent in future soundscape studies.

In addition to the cognitive difficulties residents faced in talking about sounds they were also confronted by some cultural ones. For a portion of residents talking about sounds was indeed a novel experience. Sound itself was further subsumed under the more narrow definition of noise, and noise made the focus of the discussion. Even in their discussion of noise, however, residents
commonly stumbled over what Truax (1984) termed "deaf spots". Thus, some residents largely accepted high ambient noise levels as normal, and seemed unaware of much of their local acoustic environments. This lack of awareness or even lack of interest shown by some residents is a similar problem to that encountered in almost all studies of everyday experience and explorations of peoples' daily lives. Much of this experience is habitual and taken-for-granted, and hence not easily discussed or articulated. The challenge for the researcher is thus to develop qualitative, interactive methodologies sufficient to draw out these hidden dimensions of daily life and experience and to reveal their richness and vitality.

8.3.3 A Concluding Word: 'Out of Tune - Out of Touch'

A small but emerging body of literature in both geography and the other social sciences increasingly points to the current environmental or ecological crisis, a product of humankind's loss of intimacy with nature and the earth. At one level, humankind may indeed be said to be 'out of tune' with the world around them. In a philosophical sense, much of modern urban living contributes to a general sense of 'placelessness' or even 'homelessness', with people uprooted from their traditional places of residences and ways of life. In this sense, nostalgia is frequently expressed as a return to a former, and perhaps mythical time, in which people were in closer more intimate contact with the world around them.

At a basic level, it is indeed the notions of place and home that are increasingly missing from people's daily lives. Both the notions of home and place inculcate humankind in multiple senses of intimacy - they both commonly evoke feelings of familiarity, proximity, well-being, wholeness and above all else belonging. The significance of sound in such relationships is crucial. With
its physical properties sound remains a vital if invisible link between people and the daily worlds they encounter. Indeed, it is perhaps beyond mere coincidence that in German at least, the word 'belonging' (gehoren) is etymologically related to "hear" (hören).

Above all else, a well-developed sense of place may be summed up in the word belonging. A deep sense of place, however, comes only from habituation. It is rooted in a commonplace familiarity and intimacy with place which subsequently results in a deep and rooted knowledge of place. With its enriching, evocative, and physical properties sound has the potential to foster this relationship, if indeed a relationship of any substance is developed.

For some residents in all three study areas, however, their soundscapes were alienating and devoid of meaning, form or structure suggesting somewhat of a breakdown in this relationship and a resultant distancing from place. Such breakdowns are significant and reveal something of the nature of modern urban life and experience. Indeed, within much contemporary geographical literature, the growing similarity between different urban places and the loss of rich local senses of place have often been remarked upon. References to the 'sameness' of places and the blandness of place experiences, however, usually refer directly to the visual appearance of the material, built environment rather than the complete array of sensory worlds that characterize human experience. The acoustic experiences of a portion of the residents in each of the three neighbourhoods explored in the current study suggest that not only do the major sections of one city look much like those of any other, but they increasingly beat with a similar, frequently entrained, repetitive rhythm - namely that of traffic flows.

In true humanistically pragmatic terms, the researcher must ask him or herself what the answer is to this growing anonymity and blandness of urban experience, specifically within the current thesis in acoustic terms. Fortunately,
the answer may indeed be close to hand. One of the original goals of the WSP was to focus attention on the acoustic design of everyday environments. Such a goal is obviously an ambitious one. The move toward it, however, may begin by simply encouraging people to listen to the everyday sounds that they hear as they go about their daily lives. While this may seem like a small step it is actually a fundamental one in ensuring the continued vitality of local acoustic environments and by extension people-place interactions. Indeed, by opening their ears to the world around them people may stake a personal and collective claim to local acoustic environments, and become in soundscape terms a true part of them - that is they will belong.
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Appendix One: World Soundscape Project Site Sheet
## World Soundscape Project

**Community Soundscape Survey**

**Data Sheet**

**Buildings, Materials, Physical Layout**

- **Community:**
- **Date:**
- **Observer:**
- **Area Type:**
- **Street:**
- **From:**
- **To:**

### Layout

- **Contours (Flat/Inclined):**
- **Hills (Distance):**
- **Open Areas:**
- **Trees/Vegetation:**
- **Special Features:**

### Road

- **Surface Material:**
- **Surface Condition:**
- **Width:**
- **Vehicle Parking:**
- **Sidewalks (Width/Curb):**
- **Drainage:**
- **Direction (Str./Curved):**
- **Railway Crossing:**

### Buildings

- **Style:**
- **Condition:**
- **Height:**
- **Material:**
- **Age:**
- **Lot Size:**
- **Frontage:**
- **Dist./Road:**
- **Dist./Blows:**
- **No. of Fij:**
- **Antennas:**
- **Vegetation:**
- **Rel. Structure:**
- **Comments:**
Appendix Two: Interview Outline
Hello, my name is Christopher Smith and I am a graduate student at Simon Fraser University. I am carrying out a survey to try and find out what people think about the sounds that they hear in and around their local neighbourhood. To find these views out, I am asking a sample of people a few questions and you are one of the people I would like to ask. Your answers will be treated in the strictest of confidence.

A. General Feelings About Your Local Area

I would first like to ask you some questions about your general feelings regarding the area in which you live.

1. How long have you lived at your current address? (If less than one year find out previous place of residence)

2. What factors influenced your current choice of where to live? (Probe for details)

3. What kind of things make a place a good place to live for you? (Probe for details - Why's that?)

4. Please describe what you consider to be the limits of your neighbourhood (Street boundaries).

5. How would you describe your neighbourhood in general terms? (Probe for details - Why's that?)

6. Is there anything that you particularly dislike about living in ............? (Why's that?)

7. Is there anything that you particularly like about living in ............? (Why's that?)

8. How satisfied are you with ............ as a place to live? (Why's that?)

9. How much do you feel that you really belong in ............ rather than anywhere else? (Why's that?)
B. Local Area Activities

I would now like to ask you a few questions about the time that you spend in your local area.

1. Do you work outside the home? (Probe for details)

2. What do you normally do at weekends? (Probe for details)

3. Do you shop in your local area for groceries? (Probe for details)

4. Do you shop in your local area for clothing? (Probe for details)

5. Do you shop in your local area for furniture or electrical goods? (Probe for details)

6. Do you go to any of the restaurants or cafes in your local area? (Probe for details)

7. Do you belong to any clubs or groups that meet in your local area? (Probe for details)

8. Do you visit any of the parks in your local area? (Probe for details)

C. Local Area Sounds

I would now like to ask you a few questions about the sounds that you hear when you are either at home or spending time in your local area.

Transportation Sounds

First, I would like to ask you some questions about the transportation sounds that you hear.

1. Do you hear the sounds of cars, trucks, motorcycles and buses? (Probe for details)

2. Where do you hear these sounds? (Probe for details)

3. Do you notice any differences in the amount or type of these sounds that you hear at different times of the day, days of the week, or times of the year? (Probe for details)

4. Are you able to recognize the sounds of specific vehicles just by hearing them, for example your neighbour’s car, or the local bus? (Probe for details)

5. How do you feel about the amount and types of sound that you hear from cars, trucks, motorcycles and buses? (Probe for details - Why’s that?)
Other Transportation Sounds

I would now like to ask you some questions about other transportation sounds that you hear.

1. In addition to the traffic sounds that we just talked about, do you ever hear any other transportation sounds such as aircraft, trains or even boats? (Probe for details)

2. Where do you hear these sounds? (Probe for details)

3. Do you ever notice any differences in the amount or types of these sounds that you hear at different times of the day, days of the week or times of the year? (Probe for details)

4. Are you able to recognize the sounds of specific aircraft, trains or boats just by hearing them? (Probe for details)

5. How do you feel about the amount and types of sound that you hear from aircraft, trains and boats? (Probe for details - Why's that?)

People Sounds

I would now like to ask you some questions about the people sounds that you hear.

1. Do you hear the sounds of people shouting, people singing, groups of people talking, or children playing? (Probe for details)

2. Where do you hear these sounds? (Probe for details)

3. Are there any specific activities that take place in your local area that you are able to recognize on the basis of the people sounds that you hear? (Probe for details)

4. Do you notice any differences in the amount or type of people sounds that you hear at different times of the day, days of the week or times of the year? (Probe for details)

5. How do you feel about the amount and type of people sounds that you hear in your local area? (Probe for details - Why's that?)
Local Business Sounds

I would now like to ask you some questions about the local business sounds that you hear.

1. Do you ever hear sounds from local businesses, restaurants or stores? (Probe for details)

2. Where do you hear these sounds? (Probe for details)

3. Are there any specific or distinctive sounds that you are able to associate with individual businesses, restaurants or stores? (Probe for details)

4. Do you ever notice any differences in the amount or type of local business sounds that you hear at different times of the day, days of the week or times of the year? (Probe for details)

5. How do you feel about the amount and type of local business sounds that you hear? (Probe for details - Why's that)

Natural Sounds

I would now like to ask you some questions about the natural sounds that you hear.

1. Do you hear natural sounds, for example birds singing, wind blowing or water sounds? (Probe for details)

2. Where do you hear these sounds? (Probe for details)

3. Are there any specific or distinctive natural sounds that you associate with a particular place or places in your local area? (Probe for details)

4. Do you ever notice any differences in the amount or type of natural sounds that you hear at different times of the day, days of the week or times of the year? (Probe for details)

5. How do you feel about the amount and type of natural sounds that you hear? (Probe for details)
Final Questions

I would now like to ask you some final questions about the sounds that you hear.

1. Do you ever hear any clocks chiming or church bells ringing? (Probe for details)

2. Do you ever hear any sirens or horns? (Probe for details)

3. When you think about the area in which you live, which sounds come to mind first? (Probe for details - Why's that?)

4. What would you say are the five sounds that you hear most often in your local area? (Probe for details - Why's that?)

5. Which of the sounds that you hear in your local area do you consider the most distinctive or noticeable? (Probe for details - Why's that?)

6. Are there any sounds that you used to hear in your local area but now are no longer able to hear? (Probe for details)

7. Are there any sounds in your local area that you think should be protected in the same way that landmarks or buildings are protected? (Probe for details - Why's that?)

8. Do you think that your local area has become noisier, quieter or stayed the same since you have lived at your current address? (Probe for details - Why's that?)

D. Sound Recordings

I would now like to play you some recordings. These are five recordings of places nearby. Could you please tell me what sounds you hear, and where you think that the recordings were made.

I would now like to play you some more recordings. This time I would like you to tell me which of the following three recordings of park sounds and three recordings of street sounds were made in your local area. Why did you choose those recordings?
E. Personal Information

Thank you for your help and patience in answering these questions. To conclude, could I please ask you a few questions about yourself?

1. What is your occupation?
2. Do you currently own or rent your home?
3. How many people live in this home (including yourself)?
4. To Which of the following age categories do you belong?
   - Under 24
   - 25 - 34
   - 35 - 44
   - 45 - 59
   - 60 and over
5. Note sex of respondent

F. Post Interview Protocol

Note:

1. Address
2. Type of Property
3. Street features and neighbourhood character
4. Comments on the interview - Interviewee's attitude, strength of views.
5. Record any memorable phrases or descriptions.