

Centering the region:

The process of place making in Cumberland BC

by

Amber C. Paul

B.Sc. University of British Columbia, 1997

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE DEGREE OF

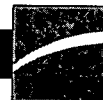
MASTER IN LANDSCAPE ARCHITECTURE
IN
THE FACULTY OF GRADUATE STUDIES

LANDSCAPE ARCHITECTURE PROGRAM
Faculty of Agricultural Sciences

We accept this thesis as conforming to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA
October, 2004

© Amber Paul, 2004



Library Authorization

In presenting this thesis in partial fulfillment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the head of my department or by his or her representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

AMBER PAUL
Name of Author (please print)

08/10/04
Date (dd/mm/yyyy)

Title of Thesis: Centering the Region: The Process of Place Making
in Cumberland BC

Degree: MLA Year: 2004

Department of Agricultural Sciences
The University of British Columbia
Vancouver, BC Canada

Abstract

Across Canada, residents living in rural communities face an uncertain future. As our natural resources continue to decline and commodity prices remain low, many resource-based industries are closing down their operations. For those communities dependant on extracting or processing these resources, the closing down of the industry can often result in the loss of the economic viability of the town. With little else to support the residents, populations decline and the future of the community is threatened.

For those communities determined to retain their residents and find alternative means of employment, making the transition from a resource-based economy to a diversified economy poses a huge challenge. Priorities shift with the growing need for new economic stimuli, which too often results in unmanaged growth that modifies the physical and social structure of the town. Quick development projects unaware of their inherent context threaten the unique character of the community.

The village of Cumberland on Vancouver Island is a community facing such a situation. Having recently expanded its borders to incorporate an additional 22 square kilometers of land, Cumberland is suddenly presented with several opportunities for development. One of the development proposals being put forth concerns an area of land surrounding the Cumberland Interchange on the new Island Highway (Highway 19). Due to its strategic position as the entrance/exit point for the entire Comox Valley, the Interchange is considered a priority for development. The fear shared by many of the residents of Cumberland is that the commercial development will translate into large scale "big box" businesses and will negatively impact the image of Cumberland. As such, the challenge for Cumberland is to create a framework in which to guide the development process while preserving its unique local identity.

This thesis project addresses this challenge by adopting an intensive methodology incorporating various levels of analysis at a range of scales. The process produced a series of design objectives intended to guide such development, and to stimulate exploration of various design opportunities. The result is an informed design that utilizes the economic potential of the region, enhances local identity and community connections, and provides the village of Cumberland with a socially sustainable vision for growth.

Table of Contents

Abstract	ii
Table of Contents	iii
List of Figures	iv
List of Tables	vi
Acknowledgments	vii
Chapter 1: Introduction	1
Chapter 2: Project Overview	8
2.1 Inspiration	8
2.2 Thesis statement, goals & objectives	8
Chapter 3: Background concepts	10
Chapter 4: Site Analysis	16
4.1 Introducing the Site	16
4.1.1 Existing context	18
4.1.2 Historical context	23
4.1.3 Site history	24
4.2 Examining the Larger Context	26
4.2.1 Demographic and Development trends	27
4.2.2 Aesthetic Attitude	28
4.2.3 Regional open space systems	30
4.3 Site Analysis	31
4.3.1 Site features	31
4.3.1 Site structure	33
4.3.2 Landscape character	34
4.4 Future context	38
4.5 Summary	39
Chapter 5: Design Framework	40
5.1 Scenario one: Conventional	41
5.2 Scenario two: Glacier Village	43
5.2.1 Design objectives	44
5.2.3 Design explorations	45
5.4 Comparison	54
5.4.1 Quantitative comparison	54
5.4.2 Land-use comparison	56
Chapter 6: Conclusions	59
References	60

List of Figures

Figure 1. The location of Comox Valley on Vancouver Island.....	2
Figure 2. The location of Cumberland in the Comox Valley.....	2
Figure 3. Cumberland east of Courtenay.....	3
Figure 4. Aerial photo of the community of Cumberland.....	4
Figure 5. Cumberland borders.....	4
Figure 6. The Cumberland interchange.....	5
Figure 7. Miners row.....	11
Figure 8. The strong central axis through Cumberland.....	12
Figure 9. Perspective view of Cumberland.....	12
Figure 10. The view from the local playing field.....	12
Figure 11. Forested roads leaving Cumberland.....	12
Figure 12. Existing context of Cumberland Interchange.....	16
Figure 13. The Cumberland Interchange.....	16
Figure 14. Sensitive habitat map.....	19
Figure 15. Maple Lake Wetland.....	19
Figure 16. Forest views from the village.....	19
Figure 17. Historic buildings along Main Street.....	20
Figure 18. Images of scale.....	21
Figure 19. Four proposed nodes of development.....	22
Figure 20. Examples of poorly planned highway development in Nanaimo.....	23
Figure 21. Chinatown.....	24
Figure 22. Old and new entrance into Cumberland.....	24
Figure 23. The different entrance experiences.....	25
Figure 24. Processional route.....	26
Figure 25. Ginger Goodwin Way.....	26
Figure 26. Memorials.....	26
Figure 27. Main Street Courtenay.....	29
Figure 28. Large-scale retail Development in Courtenay.....	30
Figure 29. Regional Open Space system.....	30
Figure 30. Location of adjacent site features.....	31
Figure 31. Images of site Features.....	32
Figure 32. High points on site.....	33
Figure 33. Site sections.....	33
Figure 34. Sand and gravel extraction adjacent to Cumberland Interchange.....	34
Figure 35. Topography.....	34
Figure 36. Watersheds.....	35
Figure 37. Stream channels.....	35
Figure 38. Drainage.....	36
Figure 39. Habitat types.....	37
Figure 40. Exposure.....	37
Figure 41. Future context.....	38
Figure 42. Scenario one.....	41
Figure 43. Examples of nearby highway commercial development.....	41
Figure 44. Before and after image of conventional development.....	42

Figure 45. Big box retail in Courtenay.....	42
Figure 46. Scenario two.....	43
Figure 47. Mixed-use retail.....	44
Figure 48. Example of architectural modification.....	44
Figure 49. Intersection of Cumberland Road, the Parkway and Highway 19.....	46
Figure 50. Entrance.....	46
Figure 51. Viewpoints.....	47
Figure 52. Boulevard trees.....	47
Figure 53. Ginger Goodwin way.....	49
Figure 54. Greenway.....	49
Figure 55. Examples of stormwater management on west side of site.....	50
Figure 56. Examples of stormwater management on east side of site.....	51
Figure 57. Flexible market space.....	52
Figure 58. Main Street.....	53
Figure 59. Small retail stores on corner lots.....	53
Figure 60. Central plaza.....	53
Figure 61. Conventional scenario.....	54
Figure 62. Alternative scenario.....	54
Figure 63. Conventional; commercial land use.....	56
Figure 64. Alternative scenario; commercial land use.....	56
Figure 65. Conventional; impervious surfaces.....	56
Figure 66. Alternative; impervious surfaces.....	56
Figure 67. Conventional; pedestrian circulation.....	57
Figure 68. Alternative; pedestrian circulation.....	57
Figure 69. Conventional; street patterns.....	57
Figure 70. Alternative; street patterns.....	57
Figure 71. Conventional; storm sewer.....	58
Figure 72. Alternative; storm sewers.....	58

List of Tables

Table 1. Business Growth and Decline.....	27
Table 2. Top Employer per municipality.....	27
Table 3. Industry quotients.....	28
Table 4. Comparison chart.....	54

Acknowledgments

I would like to express my sincere gratitude to my committee members for all their time and effort throughout the preparation of this thesis, as well as the many people who assisted me in researching this project. Together, their patience and general interest in the project topic was greatly appreciated, and for that, I am truly thankful.

Above all, I would like to thank my thesis advisor, Will Marsh, whose support consistently went well beyond what is expected of a graduate supervisor. Will has been an inspiration for me for years, and was a valuable source of wisdom and guidance in the planning process. I consider myself very fortunate to have benefited from Will's intellect, experience, perspective and energy.

I would also like to extend my respect and gratitude to my classmates and friends, whose unbelievable energy and optimism supported me in so many ways throughout the last few years. Finally, I would like to thank my mom and dad, whose unconditional support and belief in me has allowed me to follow my heart and pursue my dreams and for that, I am forever indebted to them.

Chapter 1.0: Introduction

Across Canada, rural communities are declining, many even disappearing. The cover of the October 2003 edition of Time Magazine reads; "Slow Death: Canada's small towns are fading away. Should you care?" The photograph for the cover story shows an empty and desolate street aligned with boarded up and abandoned buildings. The article identifies a significant geographic shift taking place across the country – namely, a large rural-urban migration. In fact, only fifty years ago more than a third of Canadians lived in small towns, whereas today, only one in five Canadians live in rural communities (communities with less than 10,000 people) (Time Magazine, 2003). The main reason for this shift has been the slow decline of our resource-based industries. As mines and mills close and large industrial-style farms replace small family owned farms, the fate of the small community has become very uncertain.

In British Columbia, the situation is no different. Pulp mills are shutting down, fishery openings are increasingly rare and few mines remain open. With the future of our primary resource industries being so uncertain, so too is the future of their supporting community. Furthermore, many of these communities are located in desolate and remote locations, and are unable to fill the economic void left by the departing industry. Unfortunately, the closing of local industry often signals the end of the community.

Some communities, however, are trying to maintain their viability by building a new economic base. For these communities, the challenge is to do so before the community collapses. Ultimately, the responsibility for carrying out the re-building process falls on the shoulders of the village council, which, for the most part, are comprised of individuals with little experience in processes of economic development planning. Furthermore, as the situation becomes more urgent, priorities shift with the growing need for new economic stimuli. All too frequently, the result is poorly planned and unmanaged development that modifies the physical and social structure of the landscape. Additionally, generic development patterns devoid of context often conflict with the existing character and "image" of the town. As such, the unique character and sense of place of these rural communities is eroded.

The community of Cumberland on Vancouver Island is facing similar pressures. Cumberland is a small village of 2700 people located on the east coast of Vancouver Island. Originally founded as a mining town in the late 1800s, it is a community that has not seen much change since the mine closed about forty years ago. Although some residents left when the mine closed, on average, the population of Cumberland has remained relatively stable. Cumberland is part of the Comox Valley, a physically diverse geographic area that supports several successful resource based industries, including forestry, agriculture, and fishing. As such, residents of Cumberland were able to remain in their village while commuting to work in other nearby industries.

The Comox Valley is today recognized as 'British Columbia's fastest growing region' (Comox Valley Website). In the late 1980's and early 1990's, the population of the Comox Valley grew an average of 4% per year (Comox Valley Economic Development Society; Demographics. 2002). Today, growth rates remain stable at approximately 1-2% per year, with its current population sitting at 58,252 (Comox Valley Economic Development Society; Demographics. 2002).

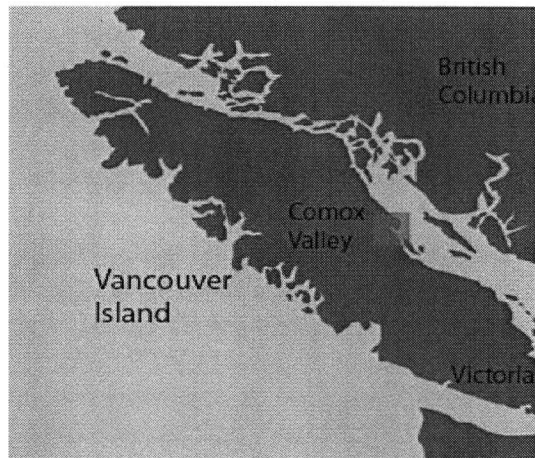


Figure 1. The location of Comox Valley on Vancouver Island

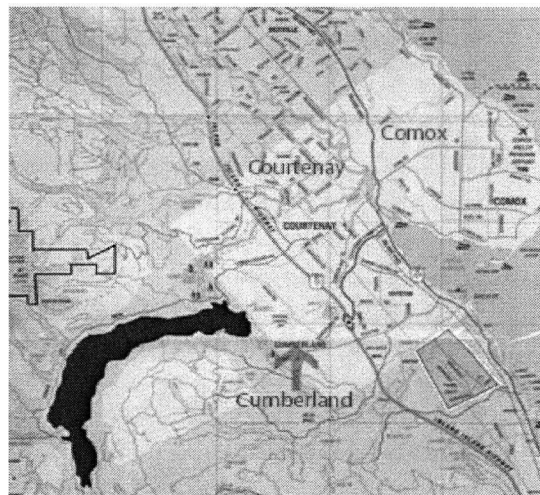


Figure 2. The location of Cumberland in the Comox Valley

Cumberland is the smallest of the three main communities in the Valley. Courtenay, the largest community in the Valley and a neighbor to Cumberland, has experienced the most radical growth rates. Between 1991 and 1996, the population of Courtenay

grew from 11,698 to 17,335, an increase of 48% (the dramatic increase is due a boundary expansion that occurred between census years) (BC Statistics website). The rapid growth in population attracted attention from investors and initiated a period of economic growth that is still ongoing. Today, Courtenay is the regional center for business, recreation and tourism. As such, new development is common in Courtenay, including a new five star golf course, several grocery stores, and numerous large retail outlets including Zellers, Wal-Mart and Costco.

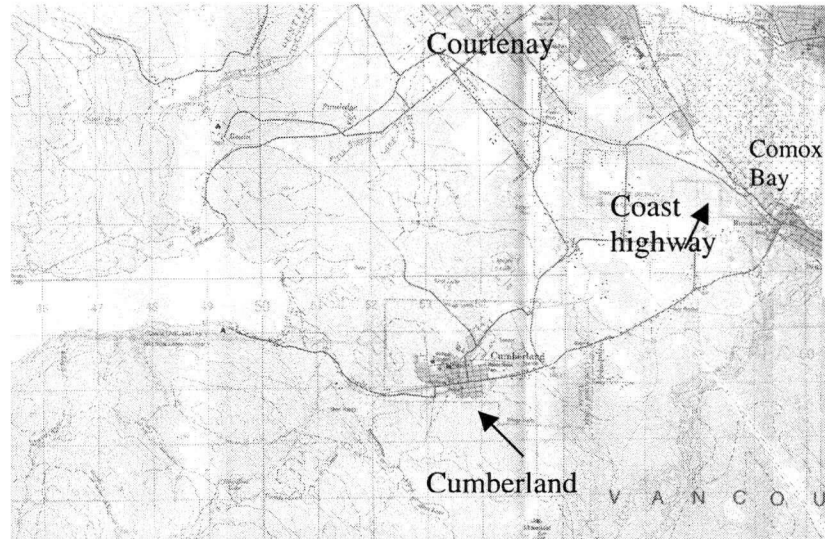


Figure 3. Cumberland is an inland community, sitting 9km east of Courtenay. Prior to the construction of the New Island Highway, the coastal island highway was the main highway on the island. It ran alongside the water and bypassed many inland communities. As such, Cumberland remained unknown to visitors of the Valley.

Conversely, as an inland community located 9km east of Courtenay, Cumberland has been largely ignored with respect to the recent economic and population growth experienced in the rest of the Valley. With little new investment coming into the village, most residents of Cumberland travel to Courtenay to work. As such, Cumberland acts as a 'bedroom community', with 70% of its residents working outside of Cumberland.

However, several recent developments have pushed this small island community to the forefront of change. In 1999, the new four-lane Island Highway that connects Vancouver Island's most southern city, Victoria, with its northernmost city, Port Hardy, was built near the Eastern border of the community. Five years later in 2003, the community expanded its borders, incorporating an additional 22 square kilometers of land, including approximately 2 square kilometers of land around the new island highway.



Figure 4. Aerial photo of the community of Cumberland, showing shows the location of the New Island Highway in relation to the community. The red line delineates the present day border of Cumberland.

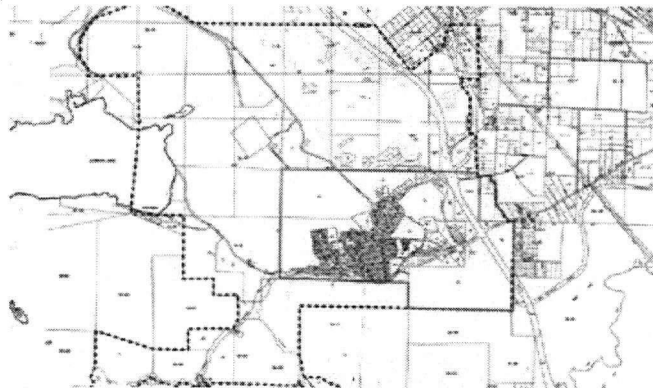


Figure 5. This map shows both the new (black) and old (red) borders, illustrating the large amount of land acquired when Cumberland expanded its borders.

Today, this newly acquired land provides several opportunities for community economic development. The Village council is examining a range of development opportunities, including the potential of a commercial development for the land surrounding the new Island Highway. Included in this area and located within Cumberlands borders is a major highway interchange, hereafter referred to as the Cumberland Interchange. The Interchange serves as the main entrance and exit into both Cumberland and the Comox Valley, and as such, has both local and regional importance as the entrance into Cumberland and the gateway into the Comox Valley.

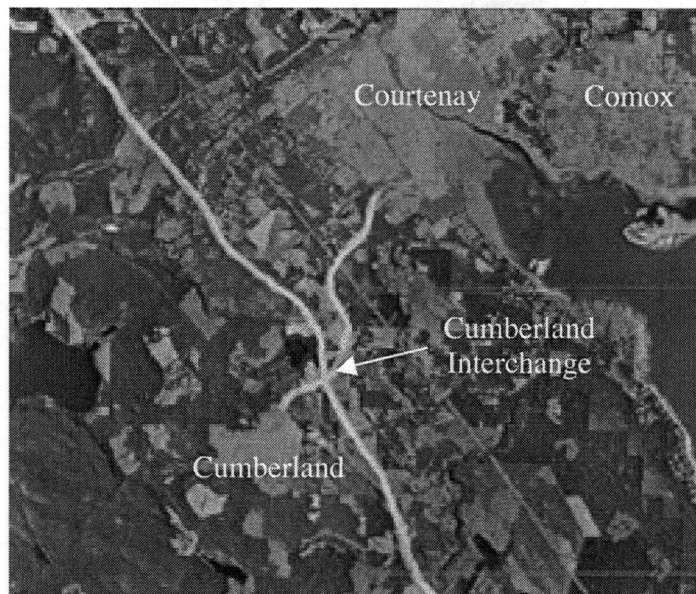


Figure 6. The Cumberland interchange is the 'GATEWAY' into Courtenay/Comox and to the Comox Valley

In light of the population growth experienced in the Comox Valley, and in particular, Courtenay, the strategic location of the Interchange makes this site an attractive opportunity for investment. The Valley, it is argued, has hit 'critical mass', supporting both large-scale retail stores as well as smaller boutique and specialty stores. For example, in 2003, Staples, Home Depot, Sport Mart and Starbucks all opened new stores in Courtenay, while Safeway and Thrifty foods expanded their stores. Furthermore, this interchange is the last remaining undeveloped intersection close to a large population center. The existing landowners have recognized the economic potential of the site and want to sell the land for commercial real estate development purposes. As such, for the community of Cumberland, the site provides an opportunity to explore the potential for economic community development.

Not surprisingly, the mention of a development around the Interchange incites immediate response from community residents. Fearful that a commercial development would translate into strip mall architecture found elsewhere along the Highway, many residents oppose such a proposal. Examples of poorly planned and awkwardly sited large-scale 'big box' stores are seen along the Island Highway, the most notable examples being those found in Nanaimo and Courtenay. In these cases, the stores are located alongside the Highway as it moves through the towns and leaves an impression to visitors of generic development patterns and highway sprawl. Residents of Cumberland fear that without further scrutiny, a similar type of development is likely to occur and regard such a proposal as a threat to Cumberland and the community character.

Fortunately, much of the discussion regarding the interchange lands is occurring as part of the Official Community Plan (hereafter referred to as "OCP") process. Required by law to review their OCP every five years, Cumberland is currently involved in this process. The implication of the OCP process is that the discussion regarding future development is given a framework in which to take place with real consequences for action. While the community has recognized the need for economic development as a way to improve its tax base and generate revenue to pay for the necessary infrastructure upgrades, residents are still uncertain about how development can be integrated into the community. Engaging in a community planning process enables the community to investigate these concerns and plan how development can fit into the community. Furthermore, it allows the community to dictate, in advance of any ground being broken, *what* type of development can occur and *where* such a development may occur.

With the aim of establishing a framework to guide the community through the development process, the OCP process is a way of protecting the community from the wrong kind of development; i.e. development that does not "fit" the scale, character and environment of the community. In addition, it allows the community to determine how a development could benefit the town and enhance its character.

As such, an essential component of any such planning process is a method of determining those elements that are critical to the image and identity of a community. In regards to Cumberland, the OCP included an extensive public participation process that asked residents what they valued most about their community. Of surprise to the process facilitators was the degree of consensus achieved with respect to the core values and critical elements of Cumberland's community character. "Cumberland has a stronger sense of community value, direction and character than we, as facilitators of the renewed planning process, have ever seen in any community we have worked with over the past thirty years!" (Marsh & Bishop, Voice of the People, 2003). The core elements of community character, as defined by the residents, are *the natural environment, the history and the scale* (Marsh & Bishop, Voice of the People, 2003).

In effect, the input from the residents of Cumberland provided clear direction to the village council as to which elements of the community need to be protected in light of any new development. This public input was used to guide the planning process and define the parameters of the new plan. The next challenge, however, is for the community to translate this information into physical interventions in the landscape.

As a profession, landscape architects can play a valuable role in guiding community councils through such a process. Trained in landscape planning and design, landscape architects are able to draw connections between scales and to synthesize what is learned at one scale into a smaller scale application, or vice versa. Their skill is to interpret information from the fields of economy, ecology, hydrology, geography, literature and art and to adapt the knowledge into viable and creative landscape design solutions (Marsh, Landscape Planning: Environmental Applications. 1998).

More specifically, it is the ability to understand how widening a road in Cumberland and its related development will affect the *natural environment* valued by the community

Accordingly, this thesis project explored design opportunities for the Cumberland Interchange. The design process applied a multi-disciplinary approach of scientific and experiential site analysis at various scales. Design objectives informed by this site analysis led to the creation of a contextually based, informed design for the Interchange. This proposal was successful in demonstrating how a process that carefully considers site condition, context and character can produce a design that not only capitalizes on the economic potential of a site, but also captures the essential character of Cumberland.

Chapter 2.0: Project Overview

2.1 Inspiration

The intent of this thesis project was to develop a better understanding of the economic realities of small rural communities and how these economic factors effect planning and design decisions. When the project was in its infancy, it was discovered that Will Marsh, a professor within the Landscape Architecture Department at The University of British Columbia, was assisting the community of Cumberland on Vancouver Island to draft their Official Community Plan. Accordingly, this presented itself as an opportunity to explore the issue of economic development as it applied to Cumberland, a small resource community.

In the early stages of analysis of this community, several design problems emerged. Most notable, however, was the contentious issue of the proposed commercial development for the Cumberland Interchange. While some residents argued for the economic benefits that such a development would bring to the community, others reasoned that a highway commercial development would reflect negatively on the community and the image of Cumberland. As such, the project became an exploration into the potential of the site to realize its economic potential and contribute positively to the image and identity of Cumberland.

2.2 Thesis Statement:

The strategic location of the Cumberland interchange as the primary entrance and exit point into the Comox Valley and Cumberland make it a particularly attractive place for development. A regional development of this nature presents significant opportunities to a community, namely revenue generation through increased tax revenues and employment. As such, communities tend to welcome these types of developments into their borders without considering their potential negative impacts. In the case of Cumberland, this Interchange is essential to the image and identity of the community. Serving as the main entrance way into Cumberland, the Interchange provides the first impression of the village. Furthermore, adjacent to the site are important community features. Maple Lake is a high value recreational area and both the Japanese/Chinese cemetery and the Cumberland Community Cemetery have spiritual value to the community. As it currently exists, both the lake and the cemeteries are effectively cut off from the village by the path of the new Island Highway. Therefore, any future development of this area must not only consider economically viability, but also how development can enhance the entrance into Cumberland, re-connect the community to its sacred sites, reflect local character, and be receptive to the biophysical characteristics of the site.

Thesis goal:

The goal of this thesis is to create an informed and contextually based design that capitalizes on the economic potential of the region, enhances the entrance into Cumberland, elaborates on experiential possibilities, is integrated into the community and represents the function of this site within the context of the larger community

Project objectives:

1. To determine the economic potential of the site in its regional context.
2. To understand how the site functions within the context of Cumberland.
3. To utilize the development to establish better connections between the community and the intersection as a way to reconnect the village with Maple Lake and the two cemeteries.
4. To demonstrate how development can occur without damaging sensitive ecological areas
5. To illustrate how the Interchange could be developed into a successful, vibrant and diversified place for the betterment of Cumberland and the larger region.

Design Process:

1. Explore the nature of Cumberland's image
 - a. Examine the physical and visual flows through the village
 - b. Identify what residents value most about their community
2. Establish the regional context
 - a. Identify and record demographic, economic and development trends within Comox Valley
 - b. Determine the aesthetic attitude of the surrounding communities by using photo documentation and personal experiences conducted by foot and by car.
 - c. Analyse the regional open space, and in particular, how the site fits into the open space system
3. Establish the local site context
 - a. Identify important site features
 - b. Determine the biophysical character of the site
 - c. Document site structure and forms
4. Establish a set of design principles or general program arguments that will guide the design decisions.
 - a. Explore various design opportunities responding to the program arguments
 - b. Speculate on various development scenarios
 - c. Develop a conceptual plan for the site
5. Compare conceptual plan to a conventional development scenario
 - a. Establish a set of measurable criteria to compare the two development scenarios
 - b. Demonstrate visually and quantitatively how the two scenarios differ

Chapter 3.0: Background Concepts

Literature describing the decline of the urban condition is prevalent. Cities, it is argued, are no longer capable of nourishing culture, community and civic life. Instead, they are becoming increasingly corporatized, sacrificing community values in favor of corporate values. Likewise, the requirement for personal interaction has been minimized through advancements in technology that have made it possible to communicate digitally rather than verbally. Furthermore, expansive networks of infrastructure have fragmented cities and larger, more centralized governments have weakened the power of local community groups. Clearly, the erosion of community in cities continues to be a passionate topic for discussion. As stated by Doug Paterson in his influential paper, *Community Building and The Necessity for Radical Revision*:

"Most community changes, occurring as responses to the automobile, television, and other technological 'improvements' have resulted in and continue to result in the erosion of a sense of community as well as a sense of place... As such, unless there is significant radical change in the way we create and renew community in North American society, our sense of community and its foundational role in our democracy will erode further, perhaps to the point of catastrophe"

(Paterson, *Community Building and The Necessity for Radical Revision*, 1997)

However, while we are quick to describe the causes of decline, we are less prone to discuss solutions. This may be due to the scale and complexity of the problems which perhaps are too large to conceptualize. More likely, however, is that, the "problem" is not critical enough to warrant any major changes. For the most part, people are content to ignore such issues rather than face significant lifestyle changes.

"Community is a central feature of humanity. Humanity is by definition of the earth, as in humus. Humanity describes qualities of kindness, mercy and sympathy. In this notion there is the fundamental sense that it is "in place" where we learn about ourselves and our associations with the earth and others."

(Paterson, *Community Building and the Necessity for Radical Revision*, 2001)

Arguing for the importance of communities as places where the public "finds itself", Paterson points out that communities which evolve in place bind the citizens together through a common geographical experience, rather than similar interests, age, incomes or values. Only by dwelling in place, he argues, do we learn about ourselves in the context of others. In this way, citizenry become self-conscious and informed and accepting of differences. Residents learn to face challenges and changes together, and must think as a community rather than as an individual.

Small towns are, in their essence, small communities. Towns evolved from the first settlement of people coming to work in the local industry. As the industry grew, so too did the supporting community of workers and family members, such that a

structure for the town eventually emerged. With many towns being located in remote and distant places in close proximity to resource industries, the importance of community was further emphasized. Residents had to work together and depend on one another for building shelter and accessing and providing food and water supplies. Likewise, being isolated in the landscape meant residents spent most or all of their time in town, exploring the immediate area and engaging in community events and fostering a sense of community through shared experiences. As such, community members developed an intimate knowledge of their natural surroundings. Residents learned to exist in harmony with one another and their surroundings, dependent on the support of their community and the resources of the surrounding environment.

This unique relationship between a community and its surroundings is better understood in small communities. There is a shared understanding of the rationale for the location of the community, providing intimate knowledge of the link between the community and the surrounding environment. Likewise, many of the residents have a connection to the early industry and as such, share a common bond and common history. This relationship cannot be underestimated. For residents of Cumberland, for example, mining is the symbol of their existence and common heritage. It gave shape to the town and is the history of the place. Time, however, has built onto the foundation of this industry. Special events, significant moments and unique people have all contributed to the character of the town and given it its current form and identity.

"Every community needs a symbol of its existence. Much of modern community frustration has come into being because a symbol of the visual reason for its life is missing. Because no symbol is found, there is no center on which to focus life."
(Walker, A Note on Camillo Sitte, 1960)

The intimate relationship between a town and its environment is still evident in Cumberland today. For example, 'miners row' still lines Dunsmuir Avenue, the main street that was once was the main rail line.



Figure 7. In the forefront is a recent image of miners row, while in the background is the historical photo showing how they lined up along the rail line (Paterson & Basque 1989).

This linear corridor is a landmark in Cumberland extending from main street, the economic focal point of town, deep into the wetland and forest area. It represents the connection between the mine (the embedded resource) and the village (process of extraction). Although the rail line no longer exists, the old grade serves as a trail from the village and into the wetland and forest beyond.



Figure 8. The strong axis moving through the middle of the village was once the original rail line connecting Cumberland to Union Bay, where coal was exported. Today, this main street is Dunsmuir Ave, the Main Street of Cumberland

The interconnectedness between Cumberland and its physical setting is evident in other ways as well. The residential area is situated on a slope and as such, offer views out towards the surrounding forest. The importance of these vistas and their contribution to the image of Cumberland is well understood to the citizens of Cumberland, evidenced by ongoing negotiations for a citizens group to buy the forest lands immediately south of the village in an effort to protect the views and to preserve the forest area for future use by the residents.

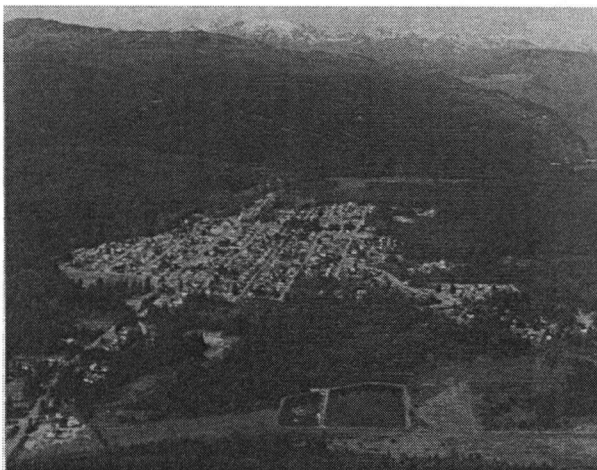


Figure 9. Perspective view of Cumberland, illustrating the concept of a "Village in the Forest"



Figure 10. The view from the local playing field looking across at the forest slopes south of the Village.

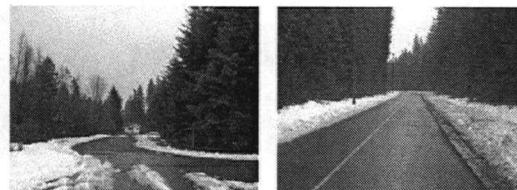


Figure 11. Forested roads leaving Cumberland

Cumberland is in the fortunate position of having a well-bounded community contained within a forest setting. The effect is that residents easily recognize the borders to the community and the town is understood as being a "village in the forest". Residents are very vocal about their natural surroundings and actively seek to protect them (Marsh & Bishop, Voice of the People, 2003).

This definition of city, or city as community, establishes community as both a physical place and a place of valued intentions and processes. More importantly, however, it asserts that city, by definition, only merges when the stones of a place and the convictions of its people inextricably join together to "form" the overriding idea...As such, the building of community must visibly embody the spirit of the collective ideas, values and ceremonies and celebrations of its citizens. The city is, therefore, first and foremost a sacred concept. (Paterson, Community Building and the Necessity for Radical Revision, 2001)

Less appreciated and understood is the strong public realm that Cumberland retains. There is a well-used and active Main Street, anchored by a popular village park at one end and 'miners row' on the other end. Plans are also in the works for a village square beside the most historic building in the community, the old post office. Commercial activities are concentrated along Main Street (known as Dunsmuir Avenue) and the majority of the stores are locally owned businesses and are well supported by the community. Main Street, however, is more than just an economic focal point. It is a place of social interaction. Door ways and street corners serve as informal gathering places and help to foster a sense of community by creating a closer, more intimate citizenry.

Main Street is also unique in its appearance. It is easily recognized as the historic center of town, with numerous heritage buildings lining the street. A heritage commission oversees the restoration and preservation of historic buildings, requiring that original paint colors and the original building materials be utilized (Village of Cumberland Commercial Area Design Guidelines, 1991). Commemorative plaques tell the history behind specific places, buildings, and people. As such, there is a quality to Cumberland unrepeatable elsewhere on Vancouver Island. It is a diverse place, with a distinct history, a unique character and a strong sense of community.

Even subtle changes to a small community like Cumberland can have a significant impact. Projects out of scale with the surrounding community can disrupt the fabric of the town, as walking distances may be increased, views may be obstructed and the intimacy of the town lost. New infrastructure risks cutting off old informal pathways, fragmenting certain areas and prohibiting access to important cultural and social features. Furthermore, architecture devoid of character may be in defiance of the aesthetic character of the town. Ultimately, unplanned development could

change the spatial structure of the town to the point where the unique character of the town is lost.

As such, in order to retain the identity of their particular community, residents must actively participate in planning the future of their town. It is essential that a vision for the community predict how certain types of change will be integrated into their landscape. Moreover, change should be perceived as something that, if properly planned for, can enhance the character of the community and positively contribute to the image of the place.

It is therefore critical for Cumberland to consider how development can be integrated seamlessly into their community. To do so requires intimate knowledge of the physical, social and ecological characteristics of the community. Likewise, it requires a multidisciplinary approach of thorough analysis and insightful design applications. The intent of such a process is to create design solutions that are specific to individual predicaments and problem areas. Identifying potential site design problems requires a comprehensive understanding of how the site is experienced as part of a larger landscape.

Such analysis begins with the assumption that each place is unique and must be understood as an interconnected system of biophysical processes acting on the site to give it its current condition. In this way, the site is understood as a living entity, sensitive to changes that affect how it functions. Knowledge of the processes acting on the site can guide how plans are configured for site development. Thus, a design solution that responds to site conditions and reflects the biophysical characteristics of the site is a unique solution specific to the site.

Moreover, evaluating a site in terms of its experiential qualities reveals similar characteristics. A 'site' is simply a spatially defined area that exists within a larger 'region'. As humans, we project artificial borders onto the site to define our problem area. In effect, a site has no physical borders and is experienced as part of a larger landscape. To be explicit, we arrive on the site from neighboring sites and we transition between sites as we step beyond the site. Likewise, we see out of the site to adjacent areas and we see into the site from those same places. On the site, we experience shade, wind, sun, cool breezes, and hear distant sounds originating from places outside of our defined problem area. As such, the experiences of the site are inextricably influenced by the surrounding context. People are active participants in the landscape, moving through space and orientating themselves according to the physical components of the landscape. Accordingly, a site is perceived in relation to a larger whole and as part of a sequence of events. Therefore, to understand the site we must first understand the larger region and how the site functions within the whole.

To summarize, in regards to community development, communities must first understand how the image of their community is perceived. This requires the identification of the specific virtues and attributes that make the community unique

and contribute to its character. Additionally, communities must give careful consideration to the biophysical condition of the landscape as an understanding of how the condition of the landscape can be modified, enhanced or preserved will inform and guide the potential options for development. Lastly, the image of the place must be recognized as a product of both the sensation of the present and the memories of the past. Communities evolve over time and so should development projects. Incremental growth allows time for changes to age and grow into their surroundings. Time allows for complex differentiated communities to emerge, shaped from the unique qualities of place and history. Only when communities grasp these concepts and develop a deeper understanding of how their town functions can they realize a vision for the community.

"The eradication of distinctive places and the production of standard landscapes results in a placeless geography, a labyrinth of principles rather than by patterns of direct experience. Nothing calls attention to itself: it is all remarkably unremarkable...You have seen it, heard it, experienced it all before, and yet, you have seen and experienced nothing..." (Relph, Place and Placelessness, 1976).

Chapter 4.0: Understanding The Site

4.1 The site

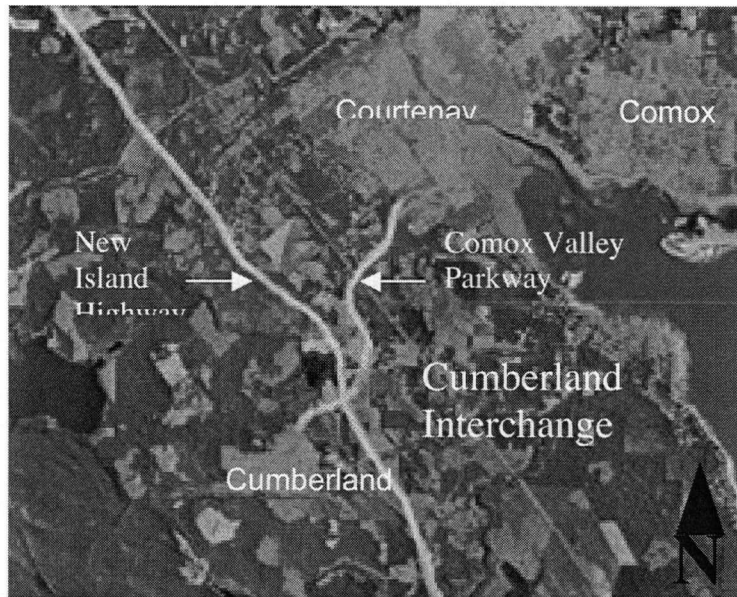


Figure 12. Existing context for the Cumberland Interchange

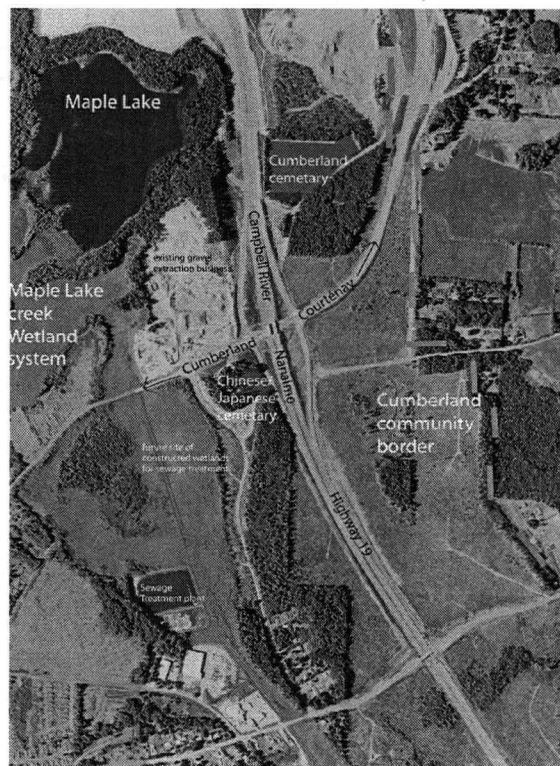


Figure 13. The Cumberland Interchange.

The study site includes approximately 45 hectares of recently cleared and undeveloped land around the Cumberland interchange. The Interchange is the intersection of the Comox Valley Parkway and the new Island Highway (Highway 19). Highway 19 is the main thoroughfare on the island, connecting the southernmost city (Victoria) with the most northern city (Port Hardy).

The Cumberland Interchange is the gateway to the Comox Valley, serving as the entrance and exit point for Courtenay, Comox and Cumberland, the three largest communities in the Valley. As such, this interchange has both regional and local significance. As the primary entrance into the Valley, it receives a high volume of traffic and occupies a highly visible location, increasing its potential for economic development. As such, the design of this area offers the potential to create and improve the entrance into the village.

The Interchange is the last remaining undeveloped intersection along the new Island Highway adjacent to a large population center. The current owners of the land, Hancock Timber Group, have recognized the economic potential of the site and want to sell the land as commercial property. The strategic location of the Interchange and the rapid population growth experienced in the Valley combine to make this site an attractive investment opportunity. Consequently, the project presents an opportunity for Cumberland to capitalize on the economic potential of the region while simultaneously enhancing the entrance into the village.

The site, however, must be recognized for more than just its economic potential and its location as the entrance to the Valley. Adjacent to the site are important features of the community, namely Maple Lake, a high value recreation area and two cemeteries, the Japanese/Chinese cemetery and the Cumberland Community Cemetery. When the new Island Highway was built, the main access road to these sites was bisected and de-activated. With limited access, these important pieces of the community fabric have been alienated.

Developing the Interchange site therefore presents an opportunity to mend the fabric of the community by re-connecting the residents to their sacred sites. Likewise, it offers an opportunity to demonstrate how a development of this nature can "fit" into its surroundings through integration into the community and exist in harmony with its neighbors. The challenge then, is to realize the economic potential of the site while responding to the needs of the community and using the realities of the larger landscape to inform and guide the design process.

4.1.1 Existing context

For the most part, the residents of Cumberland are happy with their community and are apprehensive about initiating change. However, the most common complaint voiced by citizens in the recent OCP effort, is the lack of employment opportunities in the village. In recent years, Cumberland has become as a "bedroom community", a place where residents sleep but must work elsewhere due to limited employment opportunities in the community; 70% of residents now work outside the village. Historically, the majority of the village was employed by primary industries (mining & forestry), but today these activities employ only 8% of Cumberland's residents. Instead, the largest percentages of people (30%) work in sales and service. Furthermore, of the 2,650 people living in Cumberland, only 1300 have declared earnings. The average income for those with declared earnings is \$25,000 a year (BC average is \$31,500)(Statistics Canada 2001). Until recently, it appeared that a general lack of employment might always plague Cumberland, however, several recent events have set the stage for change.

In 2003, Cumberland expanded its borders, adding 22 square kilometers of land to its previous 7.8 square kilometer area. Furthermore, in that same year, Cumberland embarked on the process to redrafting their Official Community Plan. Required by law to revisit the plan every five years, this year held special significance due to the expansion of the community borders. In addition, there was a new mayor and council in charge of carrying out the process. This input of new energy and fresh minds helped build momentum for the process and as such, it was well supported and well received in the community.

Of special relevance to this thesis project are two reports produced as part of the OCP. The first is a summary of a lengthy public participation process intended to communicate the wishes of the residents to the process facilitators. Forty-eight small-scale meetings (4 -10 people) were held to "allow and encourage citizens to discuss and define the key elements of 'character' that are essential to the current and future definition of Cumberland" (Marsh & Bishop, Voice of the People, 2003). The responses from the meetings were used to guide the planning process and to define the parameters of the new plan. Of particular interest to the facilitators was the high degree of consensus achieved in all meetings with respect to the core values and critical elements of community character. The core elements of community character, as defined by the residents, were *the natural environment*, *the history* and *the scale* (Marsh & Bishop, Voice of the People, 2003). The following brief descriptions are intended to illustrate how these elements manifest themselves physically:

Natural environment; Cumberland contains close to 1500 acres of wetlands, ponds and lakes within their borders. Wetlands have several important functions in the village. Firstly, Maple Lake Wetland is the primary means of sewage treatment for the towns liquid waste. It receives and filters both the

stormwater and the sewage from the village. Secondly, they provide an important recreational amenity for residents, sitting adjacent to the historic village core and providing easy pedestrian access. Lastly, they hold special historical value within the community, as the place where the large Chinese community once existed. Today, no physical evidence of Chinatown remains and the only reminder of the 3000 or so Chinese that once inhabited the village is the wetland.



Figure 14. Wetlands surrounding the village



Figure 15. Maple Lake Wetland

Furthermore, the surrounding forest is an equally important habitat type. Forests provide the largest landcover in the village, occupying 40% of the entire land area. Forests surround the village and delineate the civic boundaries while providing the backdrop for views out from the residential areas.

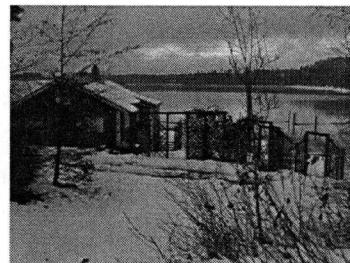
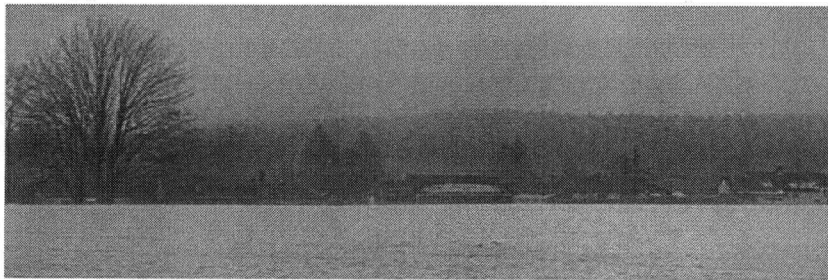


Figure 16. Views of the forest from the village

History; The image of Cumberland today is largely influenced by its history and this heritage is the first thing one notices upon entering the village. Dunsmuir Avenue, the main street, is lined with historic store fronts, painted in their original colors and often fitted with informational plaques describing the buildings unique history. A heritage council oversees the preservation and restoration of old buildings. Clearly, it is the intent of the community to protect and promote its history as the first non-native settlement in the valley.



Figure 17. Historic buildings along Main Street

Scale: Cumberland is organized by a traditional grid pattern with small block sizes and narrow streets. Block sizes of 120m x 80m create a very walkable and pedestrian friendly environment. Residential streets are narrow (approximately 6m) with gravel shoulders where cars park and which allow for water drainage. Small lot sizes (10m x 30m) and short set backs present a friendly face to the street and help further promote a pedestrian friendly neighborhood. Finally, the high school, elementary school, medical center and commercial center are locked into the grid pattern and are easily accessed by residents.

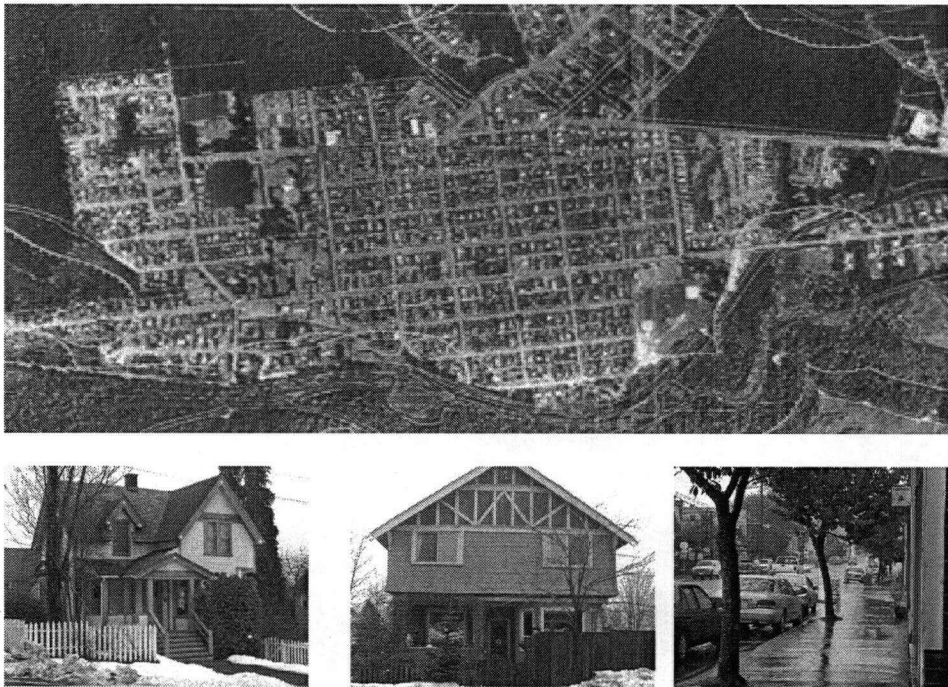


Figure 18. Small block sizes, short set-backs and wide sidewalks reflect the scale of Cumberland

The OCP requires that any new development in the community be designed in a manner that honors and reflects Cumberland's unique natural environment, history, and scale.

The second issue of relevance to this project is a strategy to guide the type and placement of any development occurring within the community. To prevent sprawling development projects, individual areas were chosen for specific types of development. Referred to as the 'multi-nodal' approach, four nodes were identified: a recreational node, an industrial node, main street and a highway commercial node.



Figure 19. Proposed nodes of development

Firstly, the recreational node is part of a proposal for recreational facilities to be built around Comox Lake. This might include cabins, vacation homes or smaller tourist businesses and activities. Secondly, an industrial park is proposed for an area of land on the Bevan Plateau, north of the historic village. With a shortage of industrial lands within the valley, this promises to generate revenue. Thirdly, village oriented commercial activities are to be located along Main Street in the historic village, with the intent of infilling vacant lots and encouraging small-scale businesses consistent with the character of adjacent buildings. Fourthly, a node for highway commercial activities is proposed for the Cumberland interchange. As the entrance way to the Comox Valley, this node has regional significance and could support significant commercial activities.

This project focuses on the fourth node, the development of the Interchange lands. The economic potential of the Interchange is high, perhaps dramatic; however, the potential to mismanage future development is also considerable. Herein lies the source of the community's primary concerns and fears. Elsewhere along the Island Highway are examples of poorly designed commercial strip malls. These large-scale strip malls present a picture of an "everywhere" community, a 'standard' place along a highway experienced many times before. This generic development pattern fails to bring attention to the unique and distinguishing landscape and historic features inherent in a town.



Figure 20. Examples of poorly planned highway development in Nanaimo

The proposal for the Cumberland interchange presents an opportunity to demonstrate how a development can be designed without compromising the values of the community. More specifically, it can serve to illustrate how the essential elements of Cumberland's character, ie. natural environment, history and scale, can be reflected in the design of a regional development. By responding to the specific virtues of the site, different solutions emerge that allow for the creation of a place of significance, an development that reflects and enhances the values of Cumberland without sacrificing community character.

4.1.2 Historical context

The history of Cumberland dates back to the mid-1800's, when exposed coal seams were first discovered in the Comox Valley. It was James Dunsmuir, owner of the Nanaimo coal operations, who in 1883, bought the rights to the Cumberland coal seams and initiated the extraction process. Originally called Union Mines, workers came from throughout the world to work in its tunnels. Ethnically diverse neighborhoods evolved parallel to one another, giving form to a culturally diverse community.

Cumberland was incorporated as Canada's westernmost city in 1898, and by 1921, it recorded its largest official population of 3176. However, this number is often discredited as Chinese and Japanese residents were not included in those counts. Unofficial reports claim there were at least 3000 Chinese living in Chinatown. Chinatown was the largest Chinese community on the west coast and second in size only to San Francisco's Chinatown. It was said there were two 400 seat theaters, 100 fan tan houses, judo clubs, lottery clubs and close to 100 local business establishments (Paterson & Garnet-Basque, 1989).

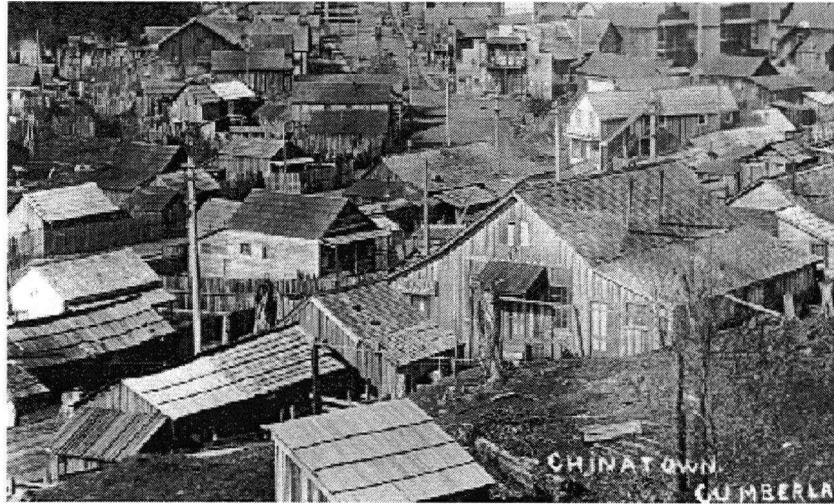


Figure 21. Chinatown

In 1935, Cumberland's greatest producing mine shut down its operations. Ten years later, a second mine ceased producing coal and by 1966 coal mining in the Comox district came to an end. Many people left in search of other work but in general, the population of Cumberland has remained surprisingly stable since the mines closed. It has neither increased or decreased in population, and as such, is unique in the Valley. Conversely, the Comox Valley in general has experienced significant population growth since the 1960's, with the largest increases occurring in the late 1980's and early 1990's (BC Statistics: Community Profiles, 2002).

4.1.3 Site history

Not surprisingly, the Cumberland Interchange has its own unique history. Prior to the new highway being built, the main entrance into town was along Cumberland road. To reach Cumberland, one drove through the old part of Courtenay along Main street, then turned onto Cumberland road traveling through the rural agricultural area and accompanying large continuous stands of forest, and finally entering Cumberland along Dunsmuir Avenue, Cumberland's main street.

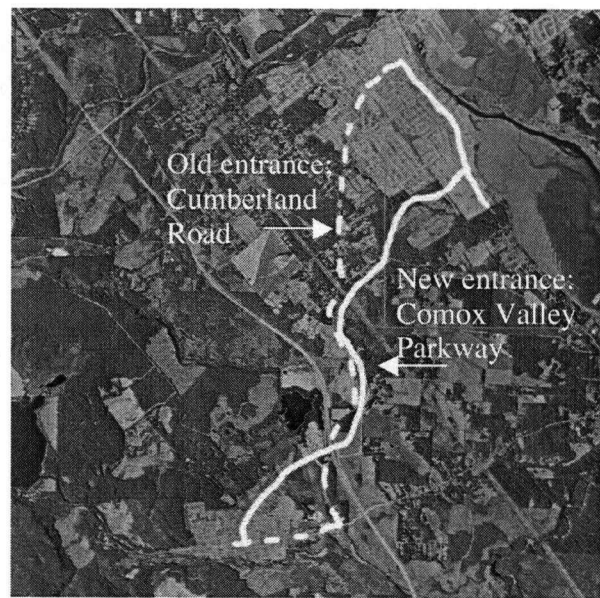


Figure 22. Old and new entrance into Cumberland

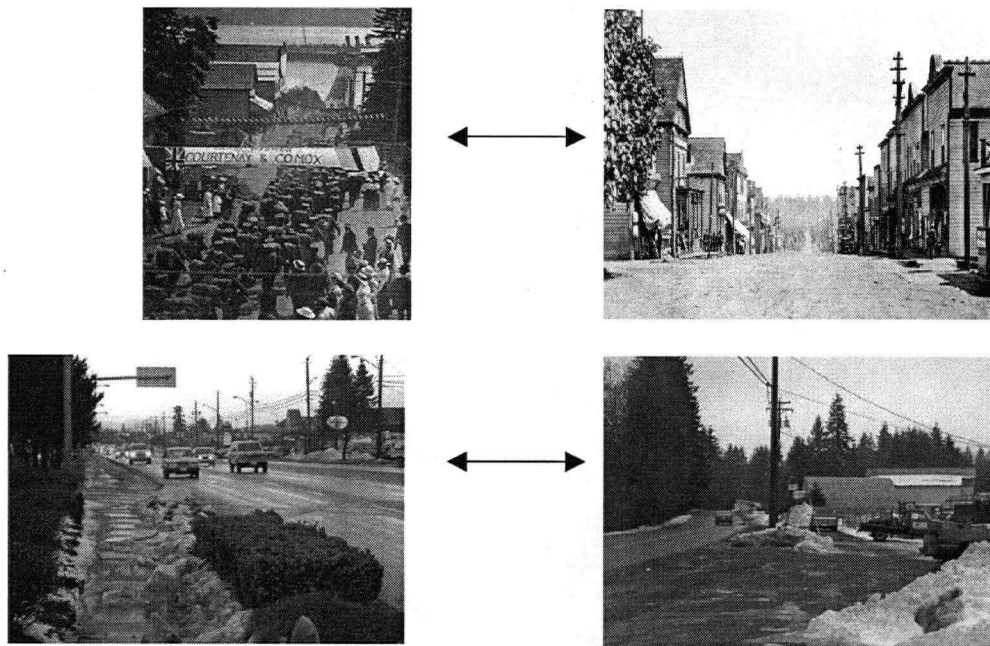


Figure 23. The different entrance experiences. The former entrance experience is at the top while today's entrance experience is represented by the images at the bottom

The experiential quality of moving between main streets and through a thick green belt in between is very different compared to that experienced now. Today, the Comox Valley Parkway has replaced Cumberland Road as the entrance way to Cumberland. The Parkway is a four lane arterial that enters into Cumberland through "the back door". More specifically, it enters alongside the industrial area of town, then proceeds through the residential area and finally comes to a T intersection at Dunsmuir Ave. At the other end of the Parkway, the connection to Courtenay is through a "big box" retail area. Under present conditions, the entrance sequence has a very little experiential value and reveals very little about the character of the Valley. Residents of Cumberland have recognized this deficiency and are actively pursuing small-scale design solutions that would enhance the entrance into their village (Marsh, personal communication). The Interchange lands are a large part of this entrance sequence and any development must consider ways to accentuate the entrance into Cumberland.

Lastly, and perhaps most importantly, Cumberland Road historically provided an important function as a processional route. Cumberland road was a small and narrow corridor connecting the village to both community cemeteries, and then to Courtenay. In 1918, after Ginger Goodwin, a well-respected resident of Cumberland, was shot by local authorities, the town held a remembrance ceremony in his honor. Goodwin was an advocate for workers rights and often led strikes in demand of fair labor laws. After attending the funeral, residents carried his coffin from the church, along Dunsmuir Avenue and then onto Cumberland Road, and finally to the

cemetery, where the ceremony was held. The procession became a tradition and in each subsequent year on the anniversary of Ginger Goodwin's death, a memorial procession was held to remember those that had passed before in the struggle for fair labor laws. Called the Miners Day Memorial pilgrimage, it followed the same route and ends in the cemetery, only today, it occurs under different circumstances. The new Island Highway has bisected Cumberland Road creating a barrier to the procession. Cutting off the Cumberland Road connection has severed a vital link between the village and their sacred site. Developing this site provides the opportunity to "right the wrong" and reconnect the community to its cemetery. Re-designing Cumberland Road as a pedestrian and bike corridor is the first step towards re-establishing this connection and recognizing the importance of this site to the spiritual well-being of the local community.



Figure 24. The processional route



Figure 25. Ginger Goodwins funeral

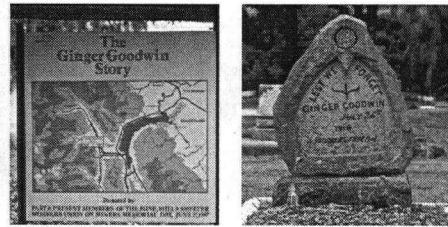


Figure 26. Remembering Ginger Goodwin

4.3 Understanding the Region

The Comox Valley is located on the east coast of Vancouver Island on a narrow coastal plain called the Nanaimo Lowland. Situated at the base of the Beaufort Mountains, the valley offers areas of rich organic soils which have encouraged agricultural development, namely dairy farms and small scale truck farms. First Nations have recorded a continuous history within the valley for over 4000 years. In fact, the Salish word Komoux means "plenty", thereby resulting in the Valley being known as the "Land of Plenty".

4.2.1 Demographic and Development Trends

Today, the Comox Valley is the fastest growing region in British Columbia with a current population of 58,252 (BC Stats, 2002). Comprised of the larger communities of Courtenay, Comox and the smaller communities of Cumberland, Hornby and Denman, the Valley stretches from Union Bay in the south to Black Creek in the north. Courtenay is the largest community in the Valley and serves as the regional center for business, recreation and tourism. Between 1991-1996, Courtenay recorded a population increase of 48% (this figure includes population gained from a boundary expansion between census years) (BC Stats). Furthermore, the recent addition of the new Comox International Airport offering daily service to Calgary and Vancouver has improved the accessibility of the Valley and helped promote its importance as a center for business, recreation and tourism.

An examination of the current trends in business activity (Table 1) and employment (Table 2) for the Comox Valley reveals numerous new investments to the area. This was largely a response of the business community to the large population increase experienced during the early 1990's. Employment figures show similar trends with the retail trade employing the second largest percentage of people, after the public sector (health, education & social services). Table 3 shows the the complete picture with construction industry, the forestry industry & manufacturing rounding up the top five employers.

Table 1. Business Growth and Decline

Company Name	New to Region
Shoppers Drug mart	2003
Staples	2003
Home Depot	2003
Sports Mart	2003
Starbucks	2003
Island Ink Jet	Expanded 2003
Thrifty Foods	Expanded 2003
White spot	"
Safeway	"
CFB Comox	"
Future Shop	New 2002
Wal Mart	New 2001
Quality Foods	New 2001
Sears	New 2001
M&M	New 2001

Table 2. Top Employer per Municipality

Comox	Quality Foods
	St. Josephs General Hospital
Courtenay	Canada Safeway
	Wal Mart
	Comox District Recreational Ass.
	Crowne Isle Resort and Golf Country
	Field Sawmills
	George P. Vanier High School
	Mc.Donalds
	Mt. Washington
	North Island College
	Overwaitea
	Thrifty
	Future Shop
	Zellers
Cumberland	Cumberland Health Center

Table 3. Location Industry Quotient

Industry	Labour Force (1996)	% of Total Labour Force	Relative to Vancouver Island/Coast	Relative to British Columbia
PUBLIC SECTOR	6,610	25.4%	0.9	1.1
RETAIL TRADE	3,955	15.2%	1.1	1.2
CONSTRUCTION	2,395	9.2%	1.2	1.2
FOREST INDUSTRY	2,140	8.2%	1.1	1.4
MANUFACTURING	1,720	6.6%	0.8	0.6
FINANCE, INSURANCE & REAL ESTATE	1,195	4.6%	1.0	0.8
BUSINESS SERVICES	1,165	4.5%	0.8	0.7
AGRICULTURE AND FOOD	905	3.5%	1.7	1.0
TRANSPORTATION	900	3.5%	1.0	0.7
FISHING INDUSTRY	895	3.4%	1.8	4.2
WHOLESALE TRADE	700	2.7%	0.9	0.6
HIGH TECHNOLOGY	378	1.5%	0.5	0.4
COMMUNICATION/UTILITIES	360	1.4%	0.7	0.5
MINING AND OIL & GAS	205	0.8%	0.8	0.4
MOTION PICTURE/AUDIO/VIDEO PRODUCTION & DISTRIBUTION	45	0.2%	1.3	0.5

4.2.2 Aesthetic Attitude

To understand the larger region, one must recognize the various aspects that contribute to the overall aesthetic attitude of the Comox Valley. Our physical experiences of the area are highly affected by our spatial orientation – how we approach the area, how we move through it and how we leave it. As such, the predominant visual and physical flows are from the north and south, via the Island Highway and from the west, from Strathcona Park and Mt. Washington. Each of these major routes offers views west towards the mountains and east towards the ocean. From the north, the mountains dominate the view and form a distinct backdrop to the flat agricultural lands of the valley. Conversely, from the south, the Strait of Georgia is the predominant feature as the highway follows the coastline. Views from around and within the Valley constantly reference its dramatic physical setting. As such, the surrounding natural environment significantly influences how residents perceive their community and how they characterize the Comox Valley (Comox Valley website).

Like Cumberland, the communities of Courtenay and Comox also have their own story and character. As the regional center for business and tourism, Courtenay is the face that greets visitors to the Valley. A stroll down the main street of Courtenay reveals a diversity of locally owned shops, cafes, health food stores, galleries and organic grocery stores. Often, signage portraying a businesses commitment to the environment is displayed on windows or doors. Welcome signs dangle from the awnings and sidewalk bulges at street corners create a pedestrian friendly feeling along Main Street. Similarly, Courtenay is host to a variety of well-attended and popular festivals and celebrations held throughout the year. Not surprisingly, Courtenay has a reputation for an active and proud citizenry, supporting local businesses, hosting numerous festivals, and actively exploring and engaging in their surrounding natural environment.

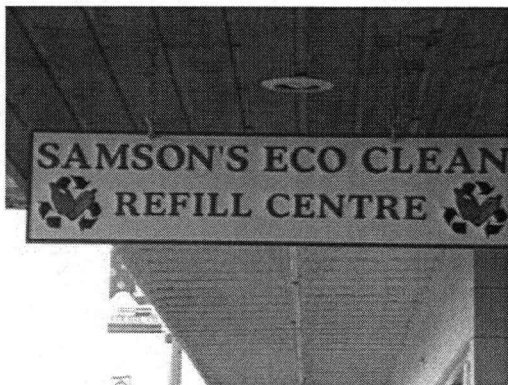
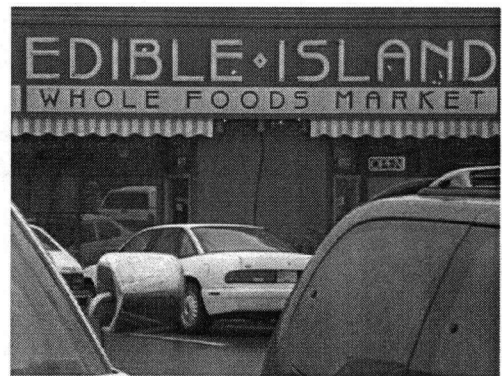


Figure 27. Main Street Courtenay. Examples of self expression, local business, eco-oriented signage and wide sidewalks along Main Street.

Today however, this image is blurred by poorly designed and awkwardly located large structures which dominate the townscape. The radical growth patterns experienced in Courtenay have led to quick and unplanned development projects. In recent years, numerous 'big-box' retail and regional offices have sprung up along the entrance highway, such that these stark architectural forms dominate the views of the larger landscape beyond. Furthermore, the first impression of Courtenay becomes one of highway big box stores and the related large networks of

infrastructure. Ultimately, such development patterns are threatening the current image of Courtenay.



Figure 28. Large-scale retail development along the entrance into Courtenay

The lessons learned from such development in Courtenay can be helpful in informing the proposal for the Cumberland Interchange. Cumberland must recognize the potential of large-scale retail and plan the area accordingly. While there are abundant negative examples of poorly planned highway developments, there are few positive ones. Developing the Interchange lands requires a vision of large regional commercial development that can fit into its surroundings and be used as a platform upon which other land uses can be supported and encouraged.

4.2.3 Regional Open Space systems

Radical growth rates pose a further threat to the viability of regional open space lands. The borders of the City of Courtenay have increased several times over the last ten years, successively encroaching further into the surrounding landscape. As infrastructure gets built out into these areas, there is a corresponding increased opportunity for development. As such, the surrounding open space lands become more fragmented and less cohesive and the habitat value of the area declines.

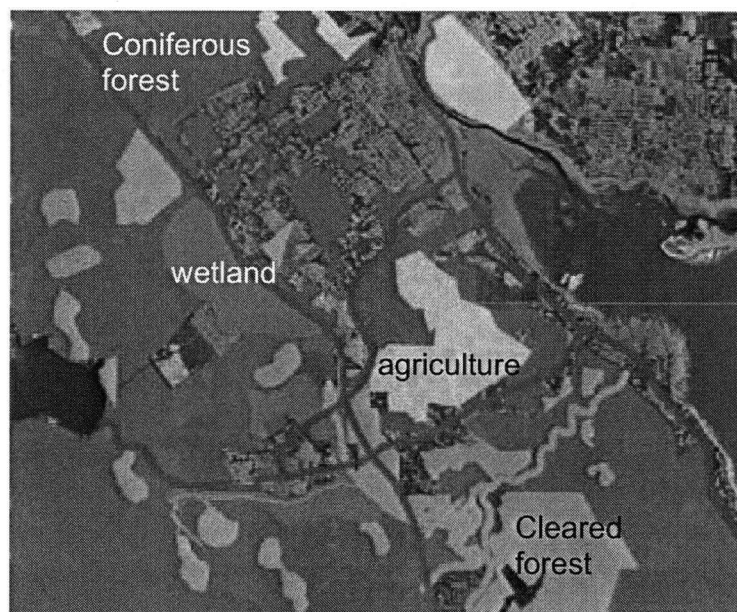


Figure 29. Regional Open Space

This project site is located within the regional open space system and as such, provides an excellent opportunity to demonstrate how development, even highway-based commercial development, can support open space lands and enhance connectivity between them.

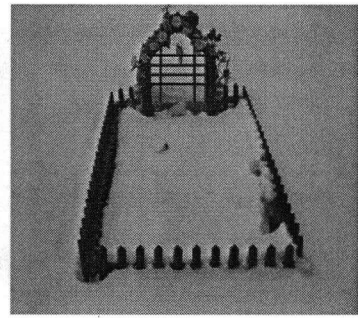
4.3 Local Site Analysis

4.3.1 Site features

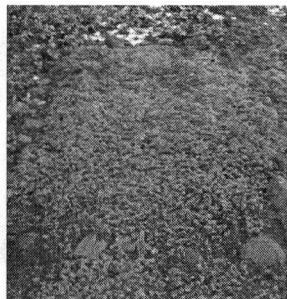
Although initially presented with a bare and seemingly uninteresting piece of land, a closer inspection of the project site revealed a rich assortment of site features. Figure 30 shows the relative location of these features with respect to the larger site. Presently, both of the community's cemeteries are isolated and disconnected from the community. However, as previously discussed, these burial grounds are integral to the essence of a community, such that better connections to the cemeteries are of immediate importance. Likewise, Maple Lake is a recreational area favored by the residents of Cumberland. Stocked with trout and interlaced with trails, it provides opportunities for fishing, biking, walking and reflecting. Furthermore, elevated areas on the site provide vistas of the larger landscape and offer different perspectives of the community. The viewpoints are currently inaccessible and should be accentuated as focal points within the site design.



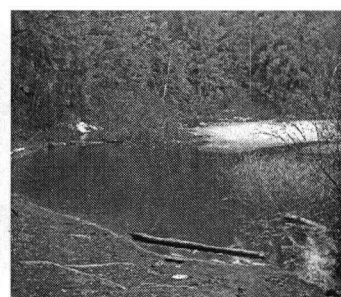
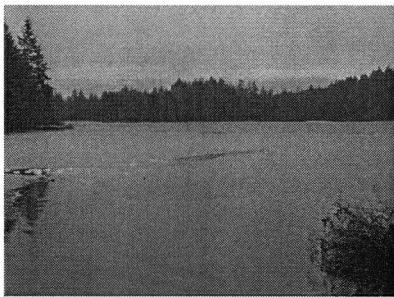
Figure 30. Location of site features



Cumberland Community Cemetery



Chinese/Japanese cemetery



Maple Lake & wetland



View east over Baynes Sound



View west towards Comox Glacier

Figure 31. Site Features

4.3.2 Site structure

Upon first impression, the site appears to have been bisected by the imposing highway infrastructure. Earth mounds cut away by the highway reveal dramatic slopes and accentuate the areas of high elevation.

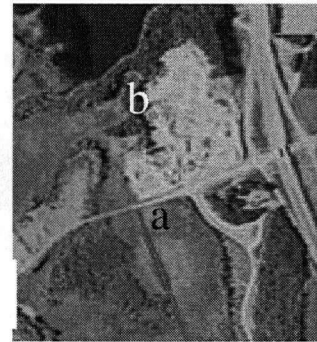


Site a



Site b

Figure 32. The high points on the site

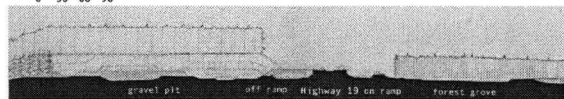


These high points on the site offer commanding views both to the east and west, as views east look out over the Georgia Strait and to the Coast Mountains beyond, while western views look at the forested foothills of the Beaufort Mountains and distant Comox Glacier.

Likewise, there are significant low points on the site. In several cases, the Comox Valley Parkway is three or four meters above ground level. These depressions are well located within the context of the project site to retrieve surface runoff, such that stormwater management techniques could utilize the existing topography to direct runoff to water collection zones.



section e-e'



section d-d'



section c-c'

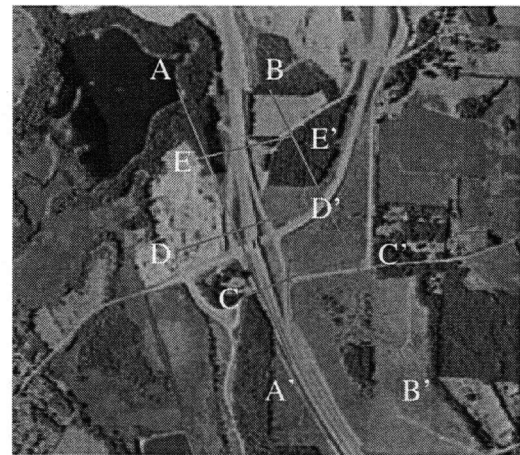
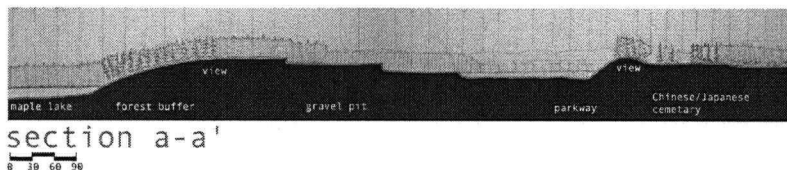
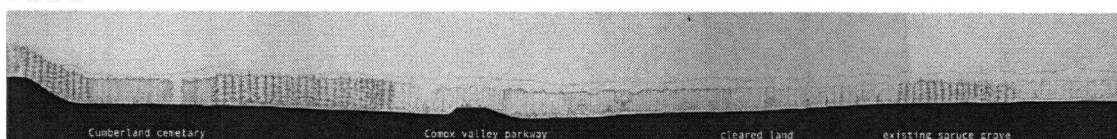


Figure 33. Site Sections



section a-a'



4.3.3 Landscape character

Landform

Glacial deposits, principally gravelly materials laid down by the Comox Glacier in the closing centuries of the last period of glaciation, underlie the entire site. The Comox Glacier extended down from the interior highlands of Vancouver Island into the Valley in which Cumberland is now located. As it retreated, the glacier left huge sand and gravel deposits in and around the area of the interchange and north into the Bevan area. In the area of the historic village, it also left kettles, which are now filled with water to form lakes, and two eskers (sinuous gravel deposits).

These large deposits of sand and gravel form the basis of a thriving sand and gravel extraction industry west of the Cumberland Interchange. Furthermore, the underground gravel and sand deposits serve to promote water infiltration and give this area of the site a high capacity for water infiltration.

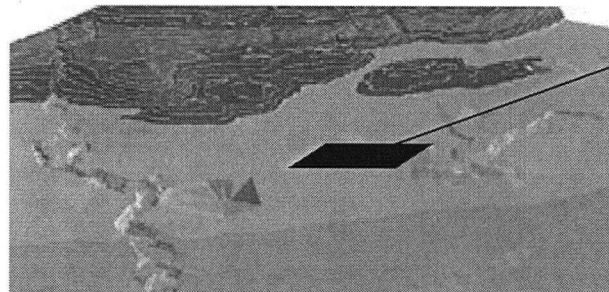


Figure 34. Sand and gravel extraction industry located immediately west of Interchange.

Conversely, the eastern side of the site has poor infiltration rates. Large interbeds of conglomerates form a bedrock-like surface condition limiting infiltration. As such, when dealing with surface runoff and stormwater management as part of the development plan, the site should be treated as two different sub-sites, each exhibiting unique hydrological characteristics.

Drainage

Being located at the base of the Beaufort Mountains means Cumberland receives a lot of rainfall, with an annual average of 157 cm of water.



Cumberland sits here at the base of these mountains

Figure 35. Beaufort mountain range

Likewise, Cumberland is in the unique position of being a headwaters community, supplying water to at least 7 small watersheds.

Thus, the Cumberland region controls much of the hydrological flow, especially critical summer flows, to streams beyond its eastern border. Importantly, several of these are salmon bearing streams. Therefore Cumberland must protect the hydrological condition of the landscape to prevent downstream effects on water channels.

The project site spans across the borders of two watersheds with the Island Highway representing the approximate boundary between the two watersheds.

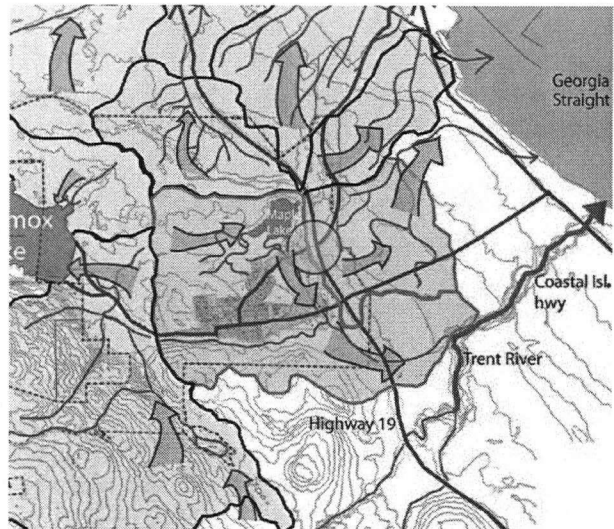


Figure 36. Watershed map
Project site is in yellow, straddling the divide between two watersheds.

Originally constructed to carry waters from mining operations, Maple Lake Creek is a man-made channel which flows south draining the western watershed into the Trent River. At the head of Maple Lake Creek is Maple Lake, fed by groundwater and by the surrounding wetlands. South of Cumberland Road, Maple Lake Creek receives stormwater and effluent water from Cumberland's sewage treatment lagoons which are situated in the large wetland between Cumberland and Royston Roads on the east side of the village.



Figure 37. Roy creek drains the eastern part of the site, while Maple Lake Creek drains the west portion of the site

In contrast, the eastern watershed drains into Roy Creek, which ultimately empties into Baynes Sound off the east coast. However, before reaching Roy Creek, water

travels through roadside ditches, agricultural ditches and various culverts as well as passing through residential areas and agricultural fields.

Once again, development of the site requires that the design solutions consider and reflect the differences in drainage patterns exhibited by the east and west sides of the site.



Figure 38. Site drainage

Habitat

Habitat concerns for the site lie primarily with the sensitive Maple Lake Wetland system, as the Maple Lake Creek feeds into a bog ecosystem that supports two species of endangered plants, a ground pine (*Lycopodium dendroideum*) and an oval leafed blueberry (*Vaccinium ovalifolium*) (Environmental Task Force Report 2003). The Wetland and Maple Lake Creek feed into Trent River, a salmon-bearing river. Furthermore, the Maple Lake Wetland is the disposal site for Cumberland's community wastewater as the Wetland stores, filters and treats the sewage and stormwater from the village. Accordingly, Maple Lake is an important ecosystem that warrants careful attention when considering development along its edges. Overloading the capacity of the Wetland risks damaging the system and preventing it from servicing the village. Development must avoid altering the hydrology of the site to avoid further impact on the Wetland.

In addition, the early successional forest that is emerging where the land was previously cleared provides a good habitat for avian species. To improve the habitat quality of the site, development should consider ways to maintain some of the young deciduous forest in this area. Situated amongst the predominantly coniferous forest, the addition of a deciduous forest would improve species diversity, vertical stratification and habitat heterogeneity. Similarly, the resultant large tracts of vegetation can be used to connect existing open space lands.

Open space lands can benefit the site ecologically, economically and socially. Economically, the open space system could support green infrastructure and reduces the costs of a conventional stormwater system. Ecologically, large continuous tracts of open space provide better quality habitat and improve water infiltration capacity. Socially, these green networks can be interwoven with trails and bike paths, providing opportunities for recreation and higher quality commuter routes. Accordingly, it is an opportunity to demonstrate how development can connect open space lands and improve the condition of the regional open space system.

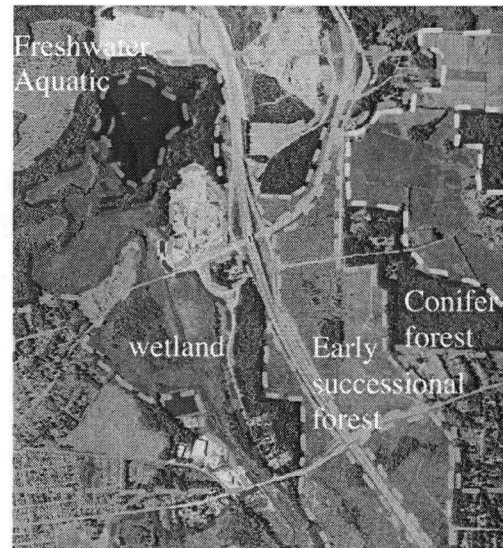


Figure 39. Habitat types

Exposure

The project site faces southeast and receives good solar exposure. When planning the street layout and when situating the buildings, it is important to consider solar exposure, as providing for maximum solar exposure along streets supports healthier street vegetation and help create a better environment for people. Likewise, orientating the buildings to maximize opportunities for passive solar heating could serve to lessen reliance on conventional energy forms. Buildings can benefit from solar heating during winter while in the summer vegetation and wide eaves could reduce solar heat.



Figure 40. Exposure diagram

4.4 Future context

There are three major changes being proposed for areas of land adjacent to the Interchange that will influence the proposal for the site. Firstly, the industrial area along Cumberland Road will be moving to the new industrial park in the Bevan Plateau area. Secondly, a new residential development, Cumbria Woods, will be developed west of the Maple Lake Wetland. Plans for Cumbria woods have already been proposed and will bring an additional 200 residential units in close proximity to the site. Lastly, the existing Maple Lake Wetland sewage treatment plant is being upgraded and will include an additional two settling ponds. Also, the plant will accommodate a demonstration/education facility to expose the process of biofiltration. A proposed boardwalk throughout the wetland is included as part of the facility and will encourage and support tourism into the area.

The implications of these changes include a higher concentration of people living close to the project site, the proximity of a new tourist attraction, and a reduced industrial presence along the entrance way.

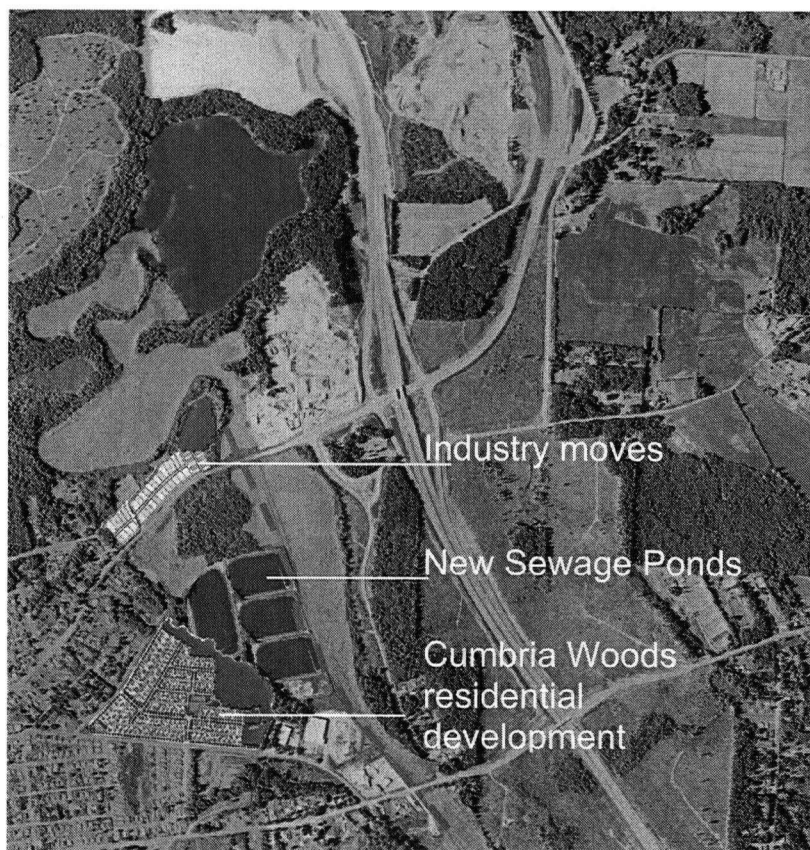


Figure 41. Future Context

4.5 Summary

The information recorded during the site analysis is only useful if the knowledge can be interpreted, adapted and organized into a useful set of "instructions" that guide the design process. This is a crucial step for the project as it combines planning and design techniques to determine an appropriate way of prioritizing decisions – what is important and why? As such, the site is understood beyond its economic value and is recognized as having a unique history, a particular condition and as being part of a larger community. Accordingly, the following is a summary of the design strategies that emerged from the various scales of analysis::

Design strategies -community analysis:

1. Create an entrance and identity for Cumberland
2. Re-connect the community to its cemeteries
3. Re-use old Cumberland Road as a pedestrian/bike corridor between Cumberland and Courtenay/Comox
4. Protect or enhance existing forest lands and sensitive habitat areas
5. Protect and enhance recreational resources
6. Honor Cumberlands heritage in design and architecture
7. Generate revenue
8. Provide employment

Design strategies - regional analysis

1. Be aware of the visual and physical flow into and through the site
2. Replace single-use zoning with mixed-use development
3. Create an architecture oriented towards human dimensions
4. Allow for alternative modes of transport and reduce auto-oriented commercial
5. Integrate site into regional open space system

Design strategies - site specific analysis

1. Prevent damage to Maple lake Wetland; don't alter the hydrological condition of the site
2. Make use of green systems for green infrastructure
3. Structure development to make use of solar energy
4. Utilize existing views and existing site features
5. Build upon strengths of existing site features to give identity to design

Chapter 5.0 Design Framework

The information acquired from the various scales of site analysis was processed and assimilated into a series of design strategies. These strategies were then used to guide the process of design exploration. Several different scenarios, illustrating varying organizations of buildings, parking areas and roadways were proposed for the Cumberland Interchange. Each one was discussed in terms of its merits and its downfalls and was subsequently rejected or revised. The development of alternative scenarios accounted for a large portion of the time spent on this project. However, in the end, only two alternative scenarios were retained: the first one being a conventional development pattern, and the second one being a speculative design proposal informed by the site analysis.

Each scenario is described and discussed in terms of its strengths and weaknesses. Scenario one represents the development pattern most likely to be imposed on the site if the community does not intervene and the framework established in the OCP is not applied to the site. Scenario two represents an informed and contextually based development pattern that responds specifically to the design strategies. The design process for scenario two is discussed in greater detail to reveal the connection between the planning and design phase. More specifically, how the various scales of analysis were used to inform the design interventions that characterize the larger site.

Lastly, the two scenarios were compared against one another. Simple yet informative criteria were used to compare the scenarios and both the quantitative and qualitative results are presented and discussed. For each scenario, certain assumptions were made:

GLA: The Gross Leasable Area of commercial space was assumed to be 4.5 ha. (This number was based on the service area of the intersection and recommendations made in the Urban Land Institutes Shopping Center Development Handbook).

Parking: It was determined that between 4.1 and 4.5 parking spaces per 1000 square feet would be provided (Urban Land Institutes Parking Requirements for Shopping Center, 1982).

5.1 Scenario one: Conventional Development

The first scenario represents a conventional development pattern.

A development such as this is characterized by large parking lots at the front of the stores, long set backs from the street, and single storey rectangular buildings. In the case of big box retail, the buildings typically are windowless, and range from 90,000 to 200,000 square feet (Big box retail; www.columbia.edu). Exterior designs tend to be standardized so individual stores are easily recognized.



Figure 42. Scenario one; Conventional

Development patterns of this nature are typically valued for their familiarity, ease of access, highly visible store fronts, clear entrances and exits, and cheaper building costs. There are many examples of this type of development along the island highway.

Similarly, they are criticized for their architectural styles, high percentage of impermeable areas, auto-oriented character, lack of pedestrian options and disconnect with neighboring communities.

Illustrative examples: Nearby examples include the large-scale retail outlets that align the highways in Nanaimo and Courtenay.



Figure 43. Highway commercial in Nanaimo and Courtenay

Land Uses: In scenario one, the entire site is built out with large-scale commercial retail. The large rectangular buildings are less likely to fit into the finer grain of a rural community and as such, the development exists as an isolated and separate land use, with little connection to the surrounding landscape. Furthermore, the large parking lots and the long set backs in front of the stores favor automobile traffic over foot and bike traffic.



Before



After

Figure 44. Photoshop image showing how a conventional development would look along side the Cumberland Interchange

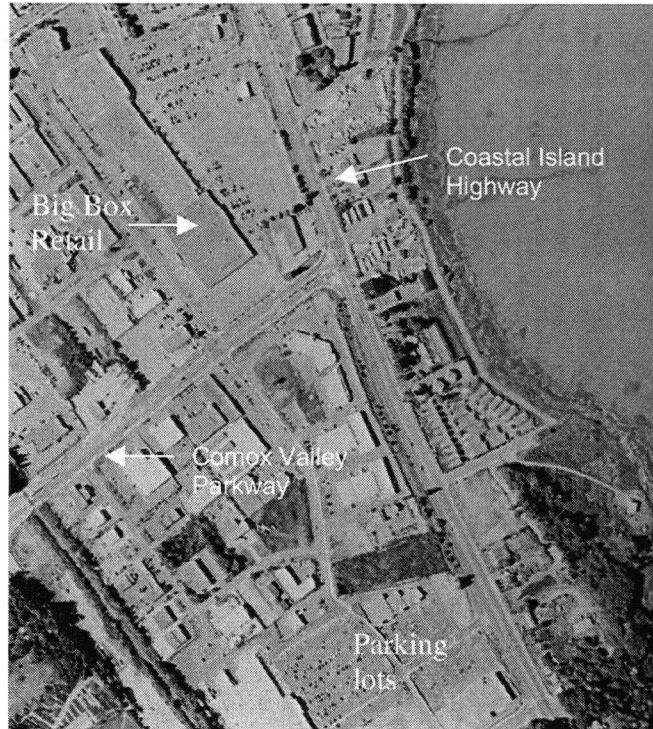


Figure 45. Big box retail in Courtenay. Note the large parking lots that ace onto the coast island highway and large buildings out of scale with surrounding architecture

Stormwater Infrastructure: This development pattern is drained by a conventional below ground closed-pipe system. Curbs and gutters capture and channel stormwater to pipes below street. All runoff from site is directed to two large detention ponds, which empty Roy Creek or Maple Lake Creek.

Detention ponds avoid the highest peak flow but instead release several smaller, more frequent peak flows. As such, damage to the creek bed still occurs, as more frequent large flushes of stormwater cause bank erosion, siltation, and over time, change the stream morphology.

Surface Character: The Status Quo alternative has large amounts of impervious surfaces, specifically in the parking lots and roofs. In the parking lots, there is little vegetation except for the small islands of plantings between rows of parking.

5.2 Scenario two: Glacier Village

The second scenario represents a contextually-based speculative development pattern.



Figure 46. Scenario two; Glacier Village

It is a development pattern valued for its compactness, connectivity, improved street character, aesthetic quality, consideration of sensitive ecosystems and its ability to recharge groundwater.

It is criticized for its higher cost of development, increase in planning requirements, longer time frame for development.

Illustrative examples: There are several precedents for mixed-use retail complexes that integrate large-scale retail into a town center concept. These include The Washingtonian Center, Easton Town Center and Philips Place (ULI website 2004). Likewise, there are a few examples of shopping outlets that have attempted to incorporate green infrastructure technology. Prime Outlets-Grove city is a shopping center oriented around a natural wetland, while Chelsea CGA Realty's Aurora Premium Outlets and the Rouse Company's Mall are recognized for their level of tree preservation (Clemson University website, no date)



Glendale, Bayshore Mall
California



Philips Place, North Carolina



McDonalds, Vermont

Figure 47. Example of mixed-use retail

Figure 48. Example of how a conventional storefront can be modified to "fit" the local character

Land Use: Developments that are valued for their connectivity to the surrounding landscape are typically mixed-use developments that incorporate a variety of store sizes. Smaller store sizes allow for a diversity of activities to occur on site, such as professional services, smaller retail services and local businesses. Furthermore, the diversity in store sizes helps to reduce the visual appearance of the large storefront typical with big box developments and as such, creates a more human scaled architecture. Finally, allowing for more land uses to occur on site reduces the dependency on the more dominant auto-oriented retail.

Stormwater Infrastructure: Stormwater treatment is a direct reflection of the biophysical condition of the site. Where possible, stormwater is infiltrated on site with infiltration trenches, green roofs and permeable parking lots. Where infiltration isn't possible, water is channeled and directed via a surface system of hardscape swales to scattered water collection areas. As such, the green infrastructure technologies utilized in this development pattern eliminate the need to a costly conventional stormwater system.

Surface Character: Scenario two has significantly less impervious surface than the conventional alternative. Overflow parking lots are permeable, as are green roofs, infiltration trenches and retention areas.

5.2.1 Scenario two; Design objectives

This section outlines a general set of instructions and objectives used to inform the design of Glacier Village. The objectives are derived from a combination of theoretical approaches to community design, the understanding of the Comox Valley and the analysis of the existing site structure and character. The design objectives illustrate the relationship between landscape planning and design demonstrating how knowledge acquired from the planning phase of the project is translated into small-scale interventions applied to scenario two. The relationship in decision-making between different scales is paramount to the design process. Each step informs the next, and the design exploration becomes increasingly more explicit and

specific as the project evolves. Moreover, this is not necessarily a linear process; in contrast, it is a circular feedback process of speculation and design.

Design objectives:

1. Create entrance sequence into Cumberland
 - a. Identity
2. Improve community connectivity
 - a. Greenways/bikeways
 - b. Trail systems
3. Incorporate green infrastructure technologies
 - a. Infiltration techniques
 - b. Roofwater collection
 - c. Let the nature of the site(s) be exposed
4. Create spaces to celebrate the diverse history of Cumberland
 - a. Allow for flexible space for community uses
 - b. Honor Cumberlands history in "Ginger Goodwin way" walk
5. Enhance civic life
 - a. Design a main street to prioritize pedestrian activity
 - b. Encourage a mixed-use retail center
 - c. Promote community interaction

5.3.1 Design Explorations

The following design interventions are in direct response to the design objectives. Design objectives are a way of prioritizing what is important and why. They help to set the tone for the larger scale site design and create the foundation for an informed and contextually based development to be realized.

Moreover, the relationship between the design objectives and the smaller scale interventions is representative of the connection between the planning and design phase. A transparent process similar to the one applied to this project ensures the design solution responds specifically to the design problem.

1. Entrance

A focal point of concentrated activity is the intersection of the former Cumberland Road, the Comox Valley Parkway and Highway 19. These three linear corridors intersect under the interchange and establish it as a natural node. However, as previously stated, Cumberland Road has been bisected and deactivated. Therefore, the first design intervention proposed is to reconfigure Cumberland Road as a pedestrian and bike corridor, in order to utilize its existing condition as a paved roadway. Smaller design moves support the establishment of the Cumberland Road greenway corridor by creating a pedestrian realm around the Interchange. As such, the Interchange becomes a node of concentrated activity providing visual evidence of human use and in effect, helping to slow down commuter traffic and informing visitors of the presence of a nearby community.

a. Enhance pedestrian experience along Comox Valley Parkway

Adding wide sidewalks and crosswalks to the Parkway establishes a distinct pedestrian environment that encourages people to walk or bike through the site. Concentrating people around the Parkway and the Interchange has several effects: Firstly, as previously mentioned, it helps to slow down traffic and to inform visitors of the presence of a nearby community. Secondly, slowing traffic and providing for pedestrian activity encourages people to spend more time on the site, allowing for the experience of the site to be fully understood. Finally, allowing for more activity around the site increases the accessibility of the site and the economic potential of businesses located on site.

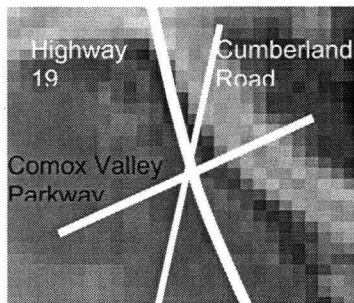
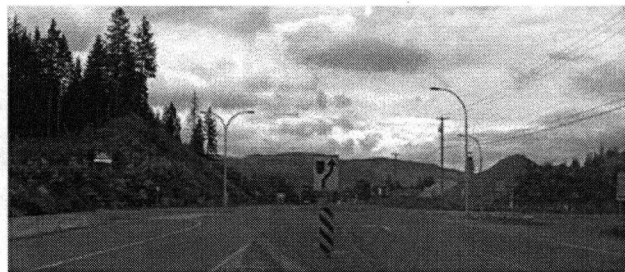
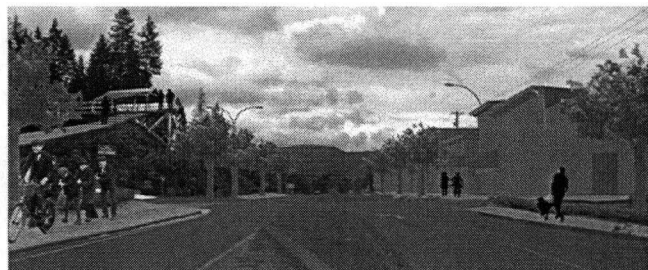


Figure 49. Intersection of Cumberland Road, Highway 19 and the Comox Valley Parkway



Before



After

Figure 50. New entrance into Cumberland

b. Accentuate the viewpoint.

Areas of high elevation provide prospective views of the larger landscape that most people don't experience in their day to day life. Views help to give context to the site and situate it in relation to the ocean and to the mountains. Furthermore, being located above the site or below the viewpoint begins to reveal the ecological flows between the respective positions (of being above or below).

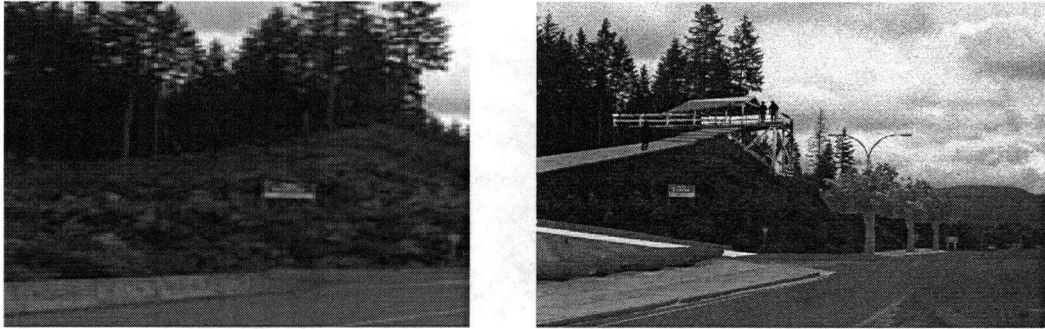


Figure 51. Viewpoints

c. Plant boulevard trees

Boulevard trees add an aesthetic quality to the landscape that often goes unnoticed. Street trees lend a spatial quality to the Parkway that renders the appearance of the road more narrow and helps to slow down traffic. Furthermore, trees provide shade for pedestrians, seasonal color and create an impression of a nurtured and cared for landscape. Lastly, a continuous allee of boulevard trees along the Comox Valley Parkway helps to draw attention to the road as a regionally significant corridor of movement that connects two local communities, Cumberland and Courtenay.

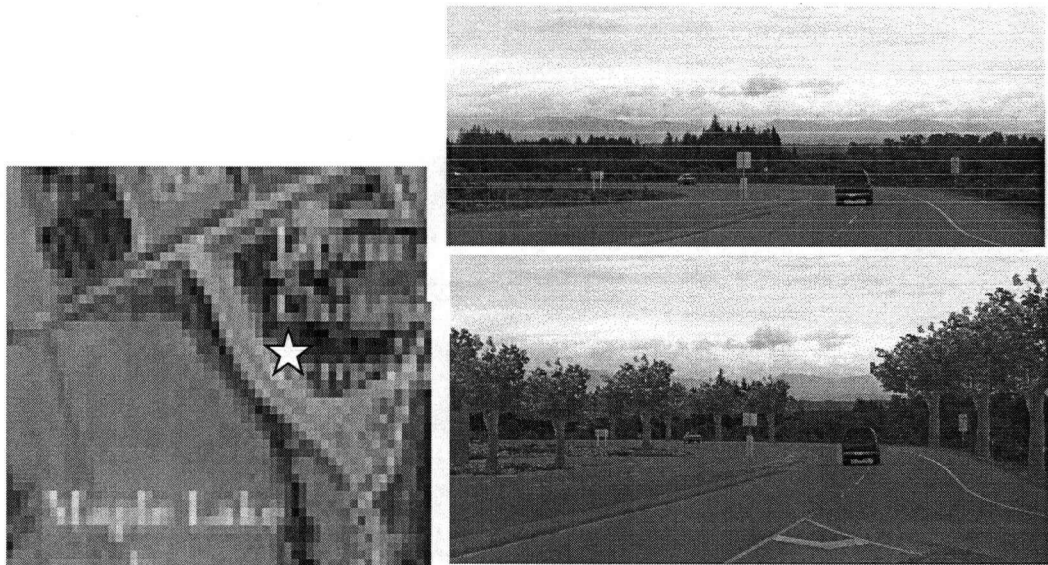


Figure 52. Boulevard trees along Comox Valley Parkway

d. Ginger Goodwin Way Memorial Walk

Re-connecting Cumberland Road re-establishes this corridor as a processional route for Cumberland. One idea is to dedicate the portion of the greenway that runs between the historic village and the community cemetery as a Memorial Walk. As such, the creation of the Walk presents an opportunity to involve the community. It is a way of displaying local talent and celebrating local achievements. Residents are encouraged to donate time or pieces of art that speaks to the image of Cumberland and its history.

"The creations of local talent invariable are of more interest to visitors, more loved and cared for by the community, and more diverse than outsider-generated ideas." (Paterson, Maintaining Small Town Character Through Design, 2003)

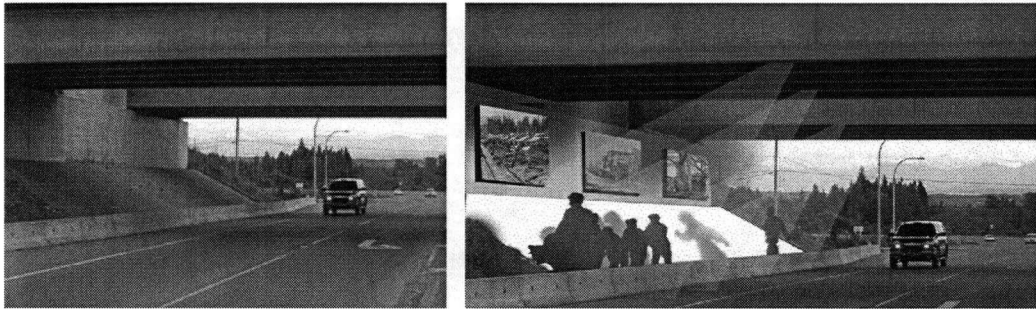


Figure 53. Before and after of the Ginger Goodwin way memorial walk under the Cumberland interchange

2. Community Connectivity

Establishing strong connections between the village of Cumberland and the development helps to reinforce the site as part of the fabric of Cumberland. As such, the site is recognized as more than just an isolated shopping area and instead, is perceived as being part of a larger whole, an important piece of the community.

a. Re-connect Cumberland road

Cumberland road is re-designed as a major regional greenway that connects Cumberland to Courtenay. Having a greenway corridor for bike and pedestrian traffic encourages walking between the village and the development while also providing for a unique experience as it crosses Maple Lake Wetland and runs alongside the Chinese/Japanese cemetery. As such, it allows visitors to walk into the community and offers them a glimpse of some of the character defining elements of Cumberland. Namely, the natural environment and its history.

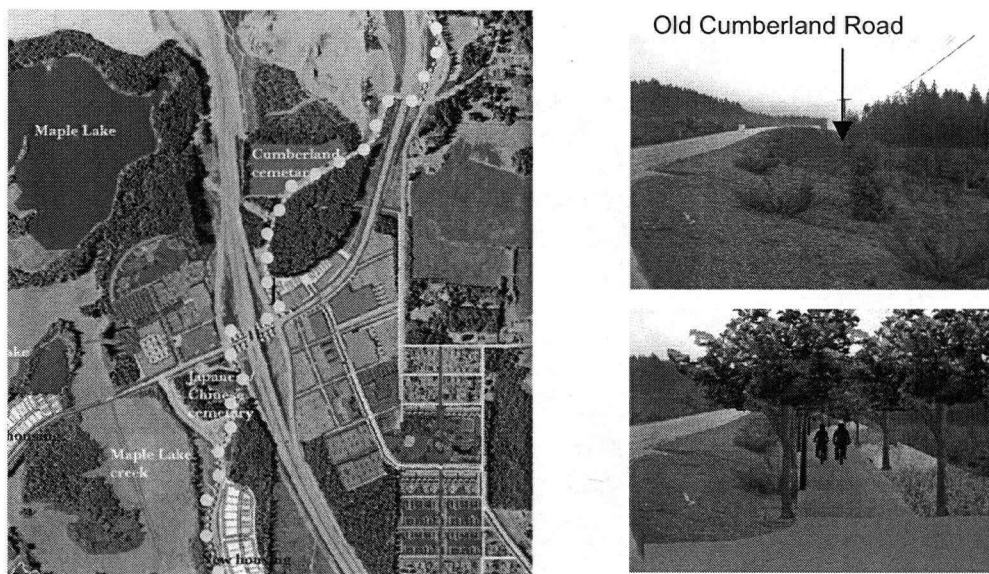


Figure 54. Cumberland Road is re-used as a regional greenway connecting Cumberland to Courtenay.

b. Link bike route into regional trail system

This regional greenway corridor is linked into the major trails systems in Cumberland and the valley. As such, the corridor encourages both recreational and tourism activities. It allows visitors to leave their car on site and bike or hike into the surrounding natural environment and experience an essential element of Cumberlands character.

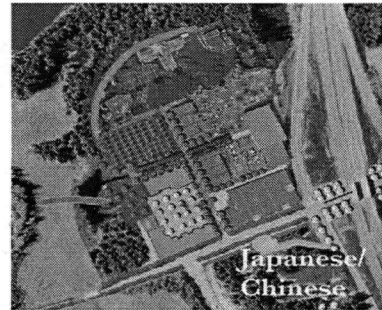
3. Green Infrastructure

The west side of the site is capable of infiltrating stormwater whereas the east side of the site is impermeable to water. Therefore, stormwater management is reflective of the distinct hydrological characteristics of these two sub-sites. On the west side, the infiltration capabilities of the site are emphasized with gravel infiltration trenches, green roofs and permeable surface materials. Encouraging infiltration helps maintain the hydrological condition of the site and protects the Maple Lake wetland. Conversely, on the east side, surface runoff is emphasized. Water visibly runs off the roofs and drains into surface water channels. Water channels are linear, hardscaped trenches that reflect the impervious nature of the site. The channels direct the surface flow to a low point on the site where water is retained and allowed to percolate slowly back into the ground water.

Applying several different stormwater management techniques to the site ensures the methods used to treat stormwater are compatible with the condition of the

landscape. The management techniques respond to the site condition and are more reflective of the local area.

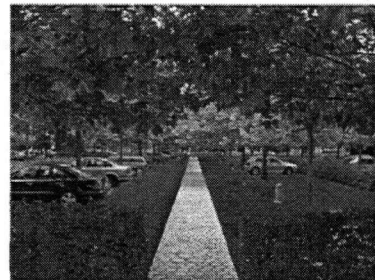
- a. The west side is underlain with gravel and sand and has a high capacity for water infiltration



- Infiltration trenches
Surface runoff from parking lots and roads drain into naturalized infiltration trenches.



- Permeable grass parking lots
Overflow parking areas are permeable to encourage infiltration. These parking areas will most likely only be used during holiday periods and as such, are not required to support frequent heavy traffic.



- Green roofs
Buildings on this site utilize green roofs to capture rain water. Excess runoff is funneled through drainspouts into infiltration trenches on the ground.



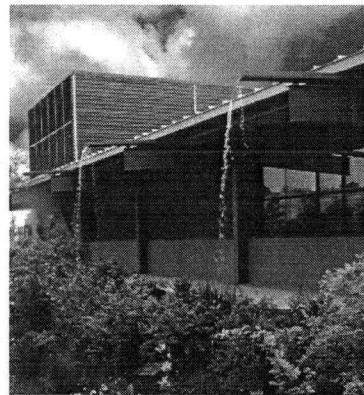
Figure 55. Water infiltration techniques applied to the west side of the site.

b. On the east side of the site the surface material under the built form is impenetrable to water.



- Surface runoff from rooftops

When appropriate, stormwater is allowed to visibly flow off rooftops and into infiltration gardens below



- Drainage channels

Surface runoff is collected in hardscaped water channels such as these and directed to the low point on the site infiltration is encouraged.



- Water collection

The low points on the site collect the surface runoff and encourage water infiltration. Overflow drains direct excess water to large open space areas where water can collect and slowly infiltrate.



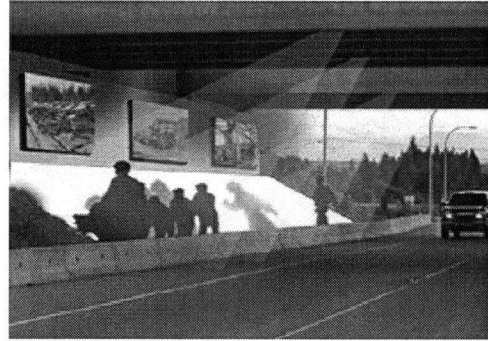
Figure 56. Examples of stormwater management techniques used on the east side of the site. Specific technology was selected according to its ability to reflect the site condition.

4. Celebrate Diverse History of Cumberland

Where the opportunity presented itself, special emphasis was given to celebrating local achievements and to remembering past citizens. Small gestures such as these reinforce the site as being part of a larger community with a unique history.

a. Memorial Walk.

The Memorial Walk introduced earlier is a way to remember Ginger Goodwin and other former citizens who played an important role in the history of Cumberland. It is a way of giving thanks to those citizens, while honoring Cumberland's unique history and contributing to character of Cumberland.



b. Community use

Creating flexible commercial space for community use provides a 'community presence' within the development. The space could be as simple as a farm market during the summer, a Christmas tree lot during the winter, or a specialty store where residents can sell locally produced goods throughout the year.



Figure 57. Flexible market space

In this way, local talent is on display and visitors are exposed to another important feature of Cumberland – the residents

5. Enhance the Civic Life on Site

The site is organized according to a grid system using Cumberland block sizes. Both Cumberland and Courtenay are organized by a grid system and as such, this is a familiar street pattern for residents in the region. Furthermore, a grid pattern provides a clear and efficient system of circulation and improves the legibility of the

site. Finally, the small block sizes facilitate residential infill should land use changes occur in the future.

a. Main Street.

Both parts of the site center commercial activities around a Main Street. Facing the buildings onto the Street creates a spatial quality to a public area that enhances the experience of being on the Street. Condon (1988) argues that volumetric spaces, in which buildings or other structures bound and enclose a three-dimensional volume of space, are experientially more comforting and appealing than the spaces surrounding isolated buildings.

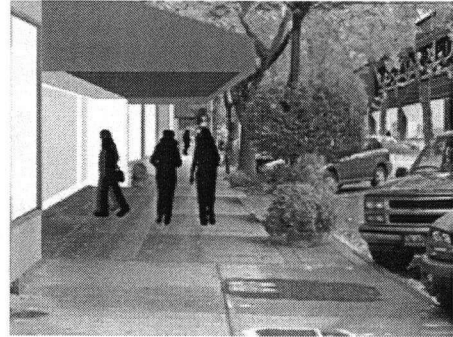


Figure 58. Main Street

b. Diversity of commercial activity

Smaller retail stores are 'piggy backed' onto larger retail outlets. The smaller stores occupy corner lots and allow for additional land-uses on the site. Small spaces can be leased to professionals, small businesses, or small scale retail shops, such as bookstores, cafes, or restaurants. Encouraging different types of activities and people in close proximity allow for the everyday and sometimes random casual meetings that foster a sense of community.

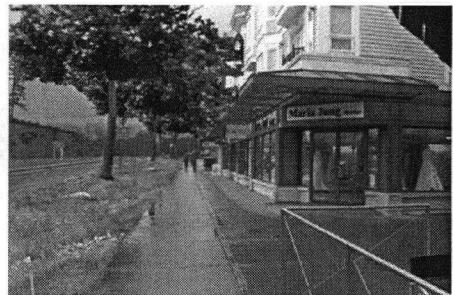


Figure 59. Small retail store with office space above.

They create shared places that are unique and shape a social geography intimately known only by those who live or work there.

c. Foster Community Interaction

Informal and formal gathering spots were provided to encourage the types of interactions mentioned above. These are defined spaces, deliberately located on site to accentuate the experience of the site with views out to the larger landscape.



Figure 60 Central plaza

5.4 Comparison

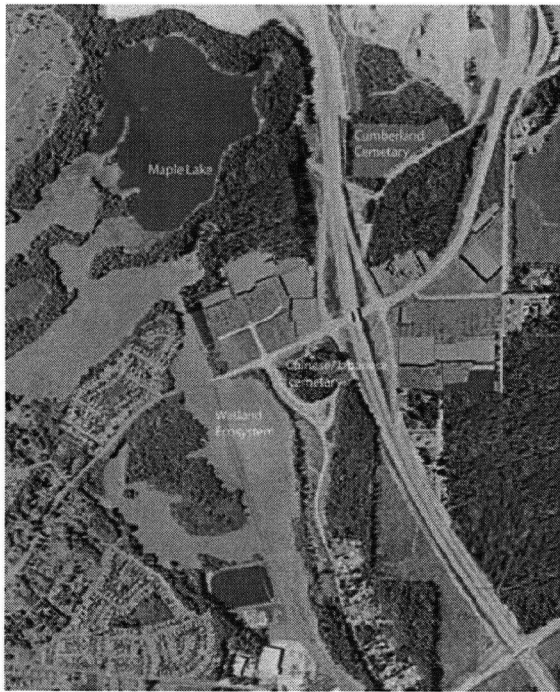


Figure 61. Conventional development

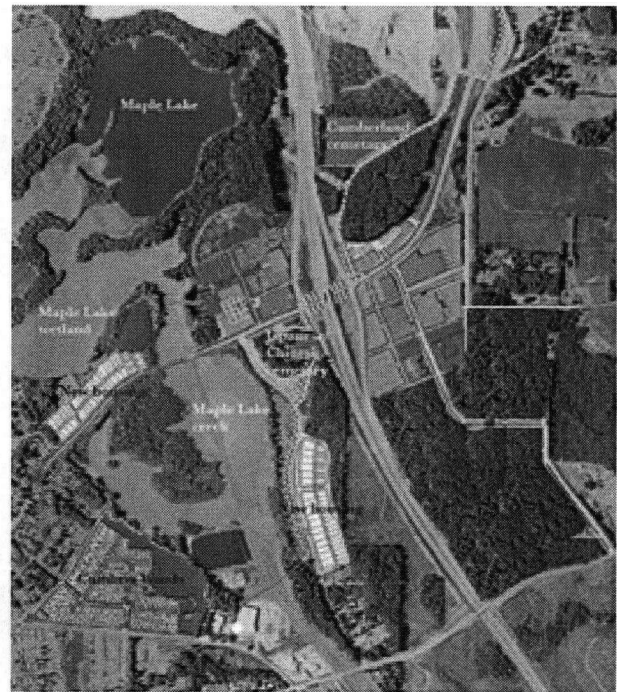


Figure 62. Alternative development

As a final stage of analysis, the two scenarios were compared based on some basic criteria. The simple criteria are reflective of the site program and site character. They include: extent of land area, character of surface material, and volume of stormwater runoff. The intent is to show how the sites differ and why. The quantitative analysis is supported with some black and white land-use diagrams illustrating the physical make-up of the site.

5.4.1 Quantitative comparison

Scenario one: conventional	Scenario two: speculative
Extent of land area: 11.8 ha	Extent of land area: 13ha
90% of land area for commercial	70% commercial purpose
0% of land area for public open space	10% public open space
10% of land area for streets and paths	10% streets and paths
0% of land area of civic purposes	10% civic purposes

Environment	Environment
Site A = 5.2 ha of impervious surface	Site A = 1.8ha impervious
Pre-dev Q Post-dev. Q 10 yr; .004m3/sec .20m3/sec	Pre-devQ Post-dev. Q 10yr; .004m3/sec .007m3/sec
25yr; .005m3/sec .23m3/sec	25yr; .005m3/sec .008m3/sec
100yr; .006m3/sec .27m3/sec	100yr; .006m3/sec .009m3/sec
Site B=6.6 ha impervious	Site B=4.0 ha impervious
Pre-dev Q Post-dev Q 10yr; .012m3/sec .03m3/sec	Pre-dev Q Post-dev Q 10yr; .012m3/sec .015m3/sec
25yr; .014m3/sec .03m3/sec	25yr; .014m3/sec .017m3/sec
100yr; .016m3/sec .03m3/sec	100yr; .016m3/sec .02m3/sec
Stormwater management	Stormwater management
960m of storm sewer	No storm drain required
Connection to stream? Yes	Connection to stream? No
Ground water recharge potential? Poor	Ground water recharge potential? Good
Infrastructure	Infrastructure
Approx 680m of dedicated car network	Approx. 600m of dedicated car network
0 m dedicated bike/pedestrian routes	Approx 400m of dedicated bike/pedestrian routes
Cost return on development	Cost return on development
Total commercial space = 4.6 ha	Total commercial space = 4.6 ha
Tax return of commercial property = \$12,117 at a tax rate of 24.473 per 1000sq.ft. 4.6 ha = 495 144 sq.ft .	Tax return of commercial property = \$12,117 at a tax rate of 24.473 per 1000sq.ft. 4.6 ha = 495 144 sq.ft .
Estimated employment opportunities = approx. 500 new jobs (on average 150 people employed per outfitter)	Estimated employment opportunities = approx. 500 new jobs (on average 150 people employed per outfitter)

Average wage for employee = 8-15\$/hr	Average wage for employee = 8-15\$/hr
---------------------------------------	---------------------------------------

Table 4. Tabulated results of comparison between scenario one and scenario two.

5.4.2 Land use comparison

The following land use diagrams illustrate the major differences between the two scenarios as they relate to specific program elements. More importantly, they graphically communicate the results of the quantitative comparison.

Commercial land-use

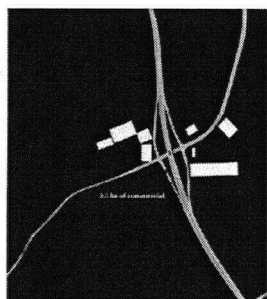


Figure 63. Conventional commercial land-use.

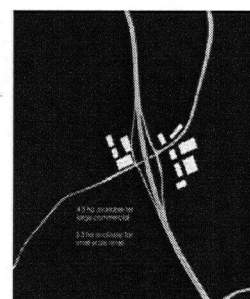
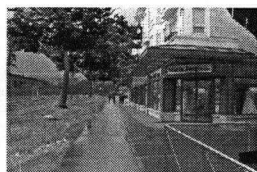


Figure 64. Glacier Village; commercial land use

While the amount of available commercial space is consistent between scenarios, it is the way the buildings are organized that tells them apart. In scenario two, the commercial buildings are clustered around Main Street. The stores have two primary entrances; one opening onto Main Street while the other faces the parking lots in behind. As such, Main Street is prioritized as a main thoroughfare for pedestrians and cars, while the availability of parking lots in the back promote accessibility. According to the Neighborhood Retailers of Washington (1992), parking is the first and last impression of a centers convenience. Parking is visible from the highway and Main Street is accessible from the Parkway, where the transit stop is located.

Impervious surface

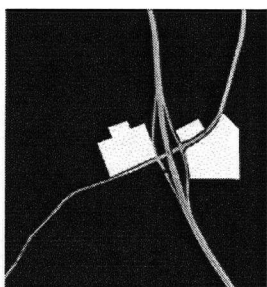


Figure 65. Conventional; impervious surface

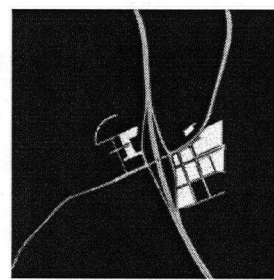


Figure 66. Glacier Village; impervious surface

Scenario two has noticeably less impervious surfaces. In this case, the selected surface material is reflective of the ability of the site to infiltrate water. Where infiltration rates are high, surface materials include grass parking lots and gravel open spaces. Where infiltration rates are low, surface materials are impervious so more surface runoff is visible. Treating the site according to its hydrological conditions reveals the nature of the site in the design and gives the site an identity that better reflects its true nature.

Pedestrian area

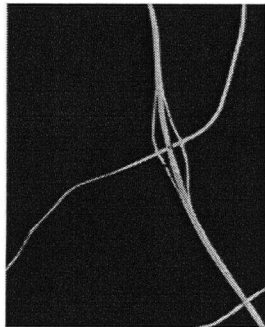


Figure 67. Conventional;
Pedestrian connections

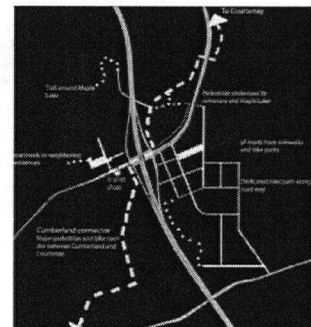
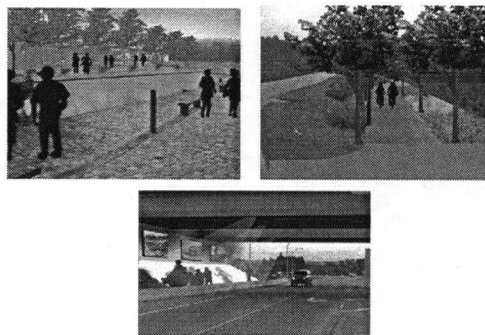


Figure 68 Glacier village;
pedestrian connections

The amount of designated pedestrian area is one of the large differences between development patterns. Within Glacier Village, priority is given to establishing strong pedestrian connections between the site, adjacent site features, and Cumberland. Designated pedestrian corridors include the greenway, Main Street and pedestrian corridors along the parking lots. Main Street intersects with the Parkway, close to the transit stop. This site has good transit connections between Courtenay and Cumberland.

Street network

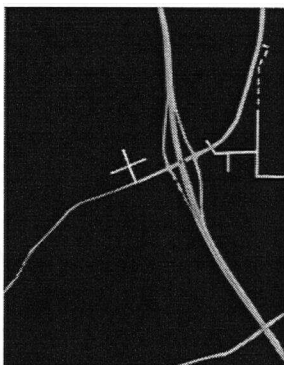


Figure 69. Conventional;
street pattern

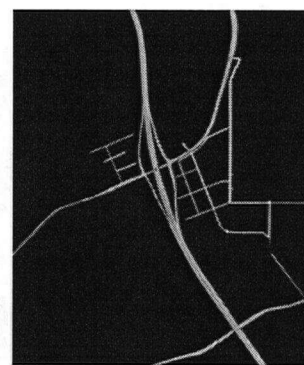
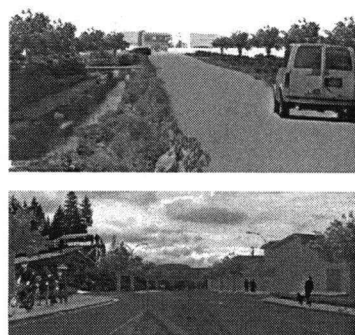


Figure 70. Speculative;
Street pattern

The street pattern of Glacier Village is based on the same size grid system of the historic Cumberland Village. Organizing the site this way meets two main objectives: It establishes a clear system of circulation and it allows for future residential infill. If the commercial land use changes, the small block pattern will facilitate the transition to new land uses.

Storm Sewer System

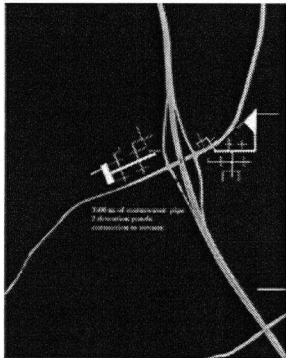


Figure 71. Conventional; storm sewer system

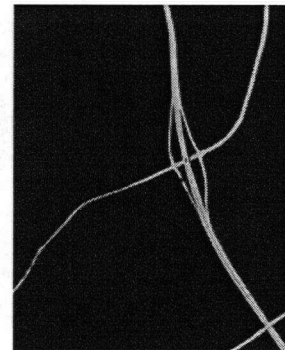
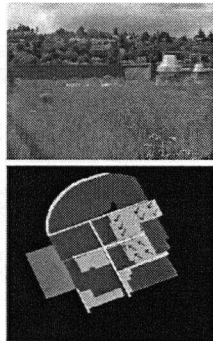


Figure 72. Glacier Village; storm sewer system

In the Glacier Village alternative, the biophysical condition of the site determines how storm water is treated. Where appropriate, water is infiltrated on site. Where soil infiltration is poor, water is collected in swales and directed to infiltration basins. In effect, the cost of installing stormwater infrastructure is avoided.

Summary

The corner location with excellent visibility at the intersection of two major arterials provides dual exposure and easy access. The challenge then, was to organize the buildings in a way that exposed "the convenience" of the site (parking close to store fronts, legible circulation patterns) while also offering a unique shopping experience that appealed to both locals and visitors and was reflective of the larger landscape. The grid pattern and the designated Main Street help meet this challenge. Main Street and smaller, more informal gathering areas encourage people to linger on site and experience the unique site features accentuated in the design. Likewise, the parking areas in behind the shops are visible from the highway and are convenient for shoppers. Pedestrian allees formed by large overhead trees and lined with infiltration trenches direct people from the parking lots to Main Street. The small interventions that help to make the site interesting actually function to protect and enhance the biophysical condition of the landscape. As such, it is a unique site design because it responds to the unique site

In summary, the site design for Glacier Village has met all the program requirements for a successful large regional shopping center. The design accommodates a large amount of available commercial space and parking. Furthermore, it provides for additional land uses to help diversify the site and make it a more dynamic and lively place. Green infrastructure technology protects and enhances the biophysical condition of the site while providing unique site features that accentuate the experience of being on site. Finally, Glacier Village is successfully stitched into the fabric of Cumberland so to create a continuous structure of community centers that helps to heal the village and accentuate its wholeness.

Chapter 6.0 Conclusion

This project focuses on the creation of a multi-functional commercial center in a strategic and highly identifiable place along the new Island Highway at the entrance to Cumberland. The proposed Glacier Village offers a contextual and imaginative solution to this challenge while enhancing the overall imageability of Cumberland. Specific interventions focused on accentuating unique experiences within the internal structure of the site, as well as enhancing connections to the surrounding landscape and revealing the ecological processes that determine the nature of the site. Moreover, the proposal is successful in capitalizing on the economic potential of the site within the larger region, as well as addressing local needs, enhancing community character, and improving the biophysical condition of the landscape.

In addition, the design proposals contained herein aim to reveal the connections between planning for a large regional center and designing for a site as an extension of a small community. The design process followed was intended to recognize the connection between planning and design in the creation of a site that stood alone as a vibrant and interesting place but that at a larger scale strengthened the health and viability of the region.

"Every act of construction has but one basic obligation; it must create a continuous structure of wholes around itself"

(Alexander, C. 1988. The Nature of Order)

It was an attempt to understand the collection of images that the residents of Cumberland and the Comox Valley have of their physical setting. Furthermore, it looked closely at the biophysical nature of the smaller site, uncovering unique qualities that created different conditions within the site itself. It was a continuous process of moving back and forth between the regional scale, the village scale and the site specific scale, understanding that large scale experiences inform smaller ones, and vice versa. It was a transparent process that worked at many different scales to achieve a single goal; the creation of wholeness in the environment.

In order to understand the nature of a place and recognize what makes it successful or poor, we need to view landscapes through an ever changing scope, embracing differences and drawing connections between scales. As such, a dynamic and imaginative design process is crucial to the development of great and lively places.

References:

Books:

Calthorpe, P and W. Fulton. 2001. The Regional City. Island Press. Washington DC.

Relph, Edward. 1976. Place and Placelessness. Pion Limited, London.

Lynch, Kevin. 1960. The Image of a City. The MIT Press, Cambridge.

Marsh, William M. 1998. Landscape Planning: Environmental Applications. John Wiley and Sons, Inc. Toronto.

Paterson, T.W., & Garnet Basque. 1989. Ghost Towns and Mining Camps on Vancouver Island. Sunfire publications Ltd., Langley BC.

Steele, Fritz. 1981. The Sense of Place. CBI Publishing, Inc., Boston, NY.

Articles:

Catto, Susan. 2003. A Slow Death. Time Magazine. October 13 pg. 48-57.

Academic papers:

Alexander, C. 1988. The Nature of Order. An Essay on the Art of Building and the Nature of the Universe. "Lecture Notes" Landscape Architecture 520: Theories in Experience and Place. University of British Columbia.

Condon, P.M. 1988. Cubist Space, Volumetric Space, and Landscape Architecture. Landscape Journal 7(1):1-14

Paterson, D. 2002. Community Building and the Necessity for Radical Revision. "Lecture Notes" Landscape Architecture 520: Theories in Experience and Place. University of British Columbia.

Reports:

Condon, P., A. Gonyea, S. Muir, J. Proft and J. Teed. 2001. Sustainable Urban Landscapes: Site Design for British Columbia Communities. James Taylor Chair in Landscape and Livable Environments, University of British Columbia. Vancouver, BC.

Economic Task Force. 2003. Economics Task Force Report. Prepared as part of the Cumberland Official Community Plan. Cumberland, BC.

Environmental Task Force. 2003. Environmental Task Force Report. Prepared for Cumberland Official Community Plan. Cumberland, BC.

Habkirk, A.M. & S. Stark. 1991. Village of Cumberland Commercial Area Design Guidelines. Prepared for the Village of Cumberland. Cumberland BC.

Humphrey, Gordon J. 2000. Regional District of Comox Strathcona Aquifer Classification Project Report: Prepared for Regional District of Comox Strathcona, Courtenay BC.

Marsh & Bishop. 2003. Voice of the People. Summary of Public Participation Process as part of the Cumberland Official Community Plan

Paterson, D. 2003. Maintaining Small Town Character Through Design. Presentation for Saving Small Towns: Low Impact Development Solutions Conference. June 19-20, Cumberland BC.

Social & Cultural Task Force. 2003. Social & Cultural Task Force Report. Prepared as part of the Cumberland Official Community Plan, Cumberland BC.

Urban Land Institute Development Series. 1999. Shopping Center Development Handbook. Urban Land Institute.

Urban Land Institute Development Series. 1982. Parking Requirements for Shopping Centers. Urban Land Institute.

Personal Interviews:

Personal Interview with Dale Bishop. Lead in Official Community Plan. February 24, 2004.

Personal Interview with John Chislet. Local architect. February 16, 2004.

Personal Interview with Lou Varella. Planner for Council of Cumberland. January 16th, 2004

Personal Interview with Will Marsh. Second-in-lead in Official Community Plan. January 16th, February 24th, March 2nd & July 11th 2004.

Websites:

Big box retail;

www.columbia.edu/itc/architecture/bass/newrochelle/resources/index.html

BC Statistics; <http://www.bcstats.gov.bc.ca/index.htm>

Clemson University; http://depts.clemson.edu/treecents/case_studies.htm

Comox Valley Economic Development Society; www.investcomoxvalley.com

Statistics Canada; <http://www.statcan.ca/>

Sustainable buildings; <http://www.ecocomposite.org/building/villagehomes.htm>

Urban Land Institute; www.uli.org