

FINAL RECOMMENDATIONS

Quinsam Heights/Nunns Creek Smart Growth Implementation Study

by

HB Lanarc Consultants Ltd.

As prime consultant with:

Richard Drdul Community Transportation Planning

G.P. Rollo Associates, Urban Land Economists



November 6, 2008

HB LANARC
PLANNING DESIGN SUSTAINABILITY



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NOVEMBER 6, 2008

City of Campbell River

301 St. Ann's Road,
Campbell River, British Columbia
V9W 4C7, Canada

For the Attention of:

Paul Stanton, MCIP, City Planning Services Manager

Re: Quinsam Heights / Nunns Creek Smart Growth Implementation Study

We are pleased to submit our final report for the Quinsam Heights / Nunns Creek Smart Growth Implementation Study.

This project has been completed during a time of dramatic change, including:

- New public and agency awareness of the need for Smart Growth to address issues of greenhouse gases and climate change, but also to respond to how climate change might impact the salmon that are iconic in Campbell River.
- New legislative powers of Bill 27, and related changes in building regulations, which came into effect during the term of the study.
- Strong real estate development markets and building at the start of the study, which changed 'overnight' to a market downturn late in the study. At the same time, there are several key properties in the study area that are under active planning for development.

In this context of on-going change, the recommendations encourage growth to occur as soon as possible in this study area close to downtown, as opposed to distant locations at the edges of the City. At the same time this study identifies land use, transportation and implementation strategies that will reduce GHG by 33% or more in the long run as compared to single family development.

In summary, the Smart Growth Plan tries to implement lofty and necessary long-term goals and targets into pragmatic plans that will guide immediate implementation steps.

We look forward to working with the City and stakeholders on the next steps.

Sincerely,

HB LANARC CONSULTANTS LTD.,



David Reid, Principal

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Acknowledgements

This plan was prepared with the co-operation of a Steering Committee, City Staff and members of the Consulting Team. We hereby would like to acknowledge the skill and public interest that was provided by the participants:

Steering Committee (Alternates)

Ron Kerr (Les Ready)	Community Advisory Commission
Ralph Walker	Development Advisory Commission
Julie Sigurdson (Mark DeGagne)	Environmental Advisory Commission
Paul Stanton	City Planning Services Manager
John McKay	(Former) City Director of Operations
Ross Milnthorp	Manager of Parks, Recreation and Culture
Terri Martin	City Environmental Coordinator

Contributing City Staff

Ron Neufeld, P.Eng.	Manager of Operations
Don MacKinnon, P.Eng.	City Engineer
Sara Brodie, P.Eng.	Assistant City Engineer
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Smokey Stephens	City Engineering

HB Lanarc Consultants Ltd.

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Harriet Rueggeberg	Environmental Planner
Brett Korteling	Planner and GIS specialist
Travis Warren	Designer, Visualizations

Richard Drdul, P.Eng.

Community Transportation Planning

G.P. Rollo Associates

Paul Rollo, Urban Land Economist

Gerry Mullholland, Urban Land Economist

Introduction to the Report

This report is organized in four key parts:

- The Main Report body provides a text and graphic summary of the study objectives, process and recommendations. It is intended to record the ideas, alternatives and discussion that went into the recommendations.
- In due course, the recommendations will likely be incorporated into the Official Community Plan (OCP), to replace the existing Schedule G. Appendix A is a draft version of the text that would appear in the OCP. As such, Appendix A includes a shortened version of the main body of the report.
- Appendix B is preliminary financial input from an urban land economist.
- Appendix C includes the input received from the public in the course of the process.

Applying Smart Growth to Campbell River

The essence of the assignment is to review how Smart Growth principles might influence and refine current planning for the Study Area.

The first Smart Growth Study in Campbell River was completed in 2007 for the North Campbell River / Estuary Area.

The Quinsam Heights / Nunns Creek Smart Growth Implementation Plan follows a similar set of principles.

Objectives of this assignment are to:

- Manage the change in land use at Quinsam Heights / Nunns Creek to create a neighbourhood that balances social, environmental and economic objectives – one that is ‘smart growth’ on the ground.
- Guide the form and density that this growth should take.
- Incorporate approaches that will lead to reductions in Greenhouse Gas (GHG) emissions.

The Study Team

For this assignment we have assembled a small but experienced team led by land use planners and landscape architects, but also placing strong emphasis on environmental planning. The team, and respective roles, are:

- ❑ **Lanarc Consultants Ltd.**, as project managers, land use planners, landscape architects, urban and environmental designers and public process consultants.
- ❑ **Richard Drdul, P.Eng.**, as community transportation planner.
- ❑ **G.P. Rollo Associates.**, as urban land economists.

Smart Growth Principles

Design compact pedestrian friendly neighbourhoods:

- Provide a coherent neighbourhood pattern with a variety of housing types
- Ensure homes address the public realm with “eyes on the street”
- Establish pedestrian oriented streets and walking paths

Create an integrated parks & environmental network:

- Provide public open space within a 5 minute walking distance of each home
- Link neighbourhoods and natural areas with a pedestrian network
- Program park spaces for community gathering and recreation

Conserve ecological integrity:

- Protect, restore and enhance terrestrial and aquatic ecosystems
- Develop innovative low-impact stormwater management solutions

Celebrate natural and cultural heritage:

- Steward environmental habitats and resources
- Celebrate local people, places and events

Plan for alternative transportation:

- Provide biking and pedestrian pathways
- Explore alternative non-vehicular options to reduce auto-dependence
- Establish transit friendly street network and collector routes

Foster a vibrant and diverse age-mixed community:

- Provide a variety of housing choices
- Accommodate diversity of lifestyles and life-stages
- Plan for “aging in place” for the maturing population
- Allow a variety of housing tenures (i.e. home ownership, rental, cooperatives)

Promote an economically viable and mixed-use commercial centre:

- Encourage local employment opportunities
- Support a mixture of retail, office, commercial and residential spaces
- Support the commercial centre with close proximity to higher density neighbourhoods

What is Smart Growth?

This study reviews Smart Growth principles, and creates recommendations on how to apply these principles to the Plan Area.

Smart growth principles and concepts have been articulated across North America as ways of achieving economically efficient, environmentally friendly and socially supportive development. Smart Growth is a collection of land use and development principles that aim to enhance our quality of life, preserve the natural environment, and save money over time.

Smart growth principles ensure that growth is fiscally, environmentally and socially responsible and recognizes the connections between development and quality of life. Smart growth enhances and completes communities by placing priority on infill, redevelopment and densification strategies.

Smart Growth Organizations and Principles

There are several government and non-government organizations that use the term Smart Growth, and there is much commonality in what the term means.

The 'Smart Growth Principles' on the preceding page are from current work for Partington Creek Village in Northeast Coquitlam. These principles would apply, but they also need to be refined to recognize the specific opportunities and constraints of Quinsam Heights / Nunns Creek neighbourhood.

Smart Growth BC is a Vancouver-based organization that defines and encourages Smart Growth in BC. See <http://www.smartgrowth.bc.ca/>. Their 'Smart Growth Toolkit' summarizes their mission to:

"...promote responsible, sustainable urban development principles and practices throughout BC, including:

- *Encouraging mixed-use zones*
- *Promoting compact and walkable neighbourhoods and towns*
- *Concentrating new growth into existing areas*
- *Enhancing the range of housing options (more affordable, appropriate, accessible)*
- *Linking new development to public transit and other transportation options*
- *Using Demand Management techniques that reduce the amount of a service or resource used, rather than simply increasing its supply*

Defining Smart Growth

Smart Growth Implementation Study

- *Integrating storm water management with stream corridor and riparian area protection strategies*
- *Reducing the overall amount of impervious surfaces, while maximizing the use of public open spaces as rain-water catchment areas*
- *Preserving and linking greenways, open spaces, farmland, and environmentally sensitive areas*
- *Ensuring effective citizen participation in development decisions"*

The principles of Smart Growth BC follow closely a similar American organization, the Smart Growth Network, with website at <http://www.smartgrowth.org/about/default.asp>. With detailed principles similar to those listed here, the website summarizes Smart Growth with the following paragraph:

"The features that distinguish smart growth in a community vary from place to place. In general, smart growth invests time, attention and resources in restoring community and vitality to center cities and older suburbs. New smart growth is more town-centered, is transit and pedestrian oriented, and has a greater mix of housing, commercial and retail uses. It also preserves open space and many other environmental amenities."

Smart Growth Principles for Campbell River and the Quinsam Heights / Nunn's Creek Area

After reviewing the above generic Smart Growth principles, and the precedent of North Campbell River, the following Smart Growth Principles are adapted to apply to the Plan Area:

1. **Mix land uses to foster a vibrant, diverse and economically-viable, age-mixed community.** The neighbourhood will have a mixture of homes, retail, business and recreational opportunities. Residents can choose to live, work, shop and play in close proximity.
2. **Build a compact neighbourhood with a variety of transportation choices.** Smart growth neighbourhoods are designed to encourage walking, cycling and transit use as an alternative to private vehicles. Road and sidewalk systems are interconnected, avoiding dead ends and cul-de-sacs, to encourage walking to daily activities, to ensure transit is viable and so that local businesses are supported.
3. **Preserve open spaces, natural beauty, and environmentally sensitive areas.** Smart development respects natural landscape features and has higher aesthetic, environmental and financial value.
4. **Utilize green infrastructure.** Green buildings and green infrastructure systems are critical for the environment in the long run.
5. **Foster a unique and inclusive neighbourhood identity.** Each community is unique, vibrant, diverse and inclusive, and celebrates its natural and cultural heritage.

The remaining sections of the report apply these Smart Growth principles to the Quinsam Heights / Nunns Creek Study Area.

Key Steps in the Planning Process

The Planning process followed four key steps:

Step 1 – Startup Consultations, Inventory / Analysis

An initial meeting was held with a Steering Committee and City staff. Existing information, policies and mapping was gathered and summarized. A summary of issues was created for the study to address.

Smart Growth Principles that apply to the study area were identified, and a slideshow of precedents was produced.

A Public Open House on Issues and Opportunities was held on February 20, 2008. Results of this workshop are included in Appendix C.

Step 2 – Concepts and Options

Following this input, three alternative concepts were created in plans and diagrams. These options were reviewed by the Steering Committee.

Public Open House B to Review Alternatives was held on March 27, 2008. Results of this workshop are included in Appendix C.

Step 3 – Draft Recommendations

Inputs were received from transportation planners and urban land economists. Based on the evaluation and input received, a set of draft recommendations and related OCP Concepts and Outline Report were prepared and reviewed with staff and the Steering Committee.

Public Open House C to Review Draft Recommendations was held on May 22, 2008. Results of this workshop are included in Appendix C.

Step 4 – Final Recommendations

Several development applications were in active consideration as the final recommendations were being considered. City staff and consultants undertook several rounds of plan refinements to respond to these applications and enquiries. Final recommendations reflect this process, and incorporate 3D massing visualizations. These show, in concept, how the principles and land use directions may be organized on the land, while recognizing that detailed planning may refine this further.

The intent of the work is to create a set of recommendations that will be subject to Council and public review and potential refinement prior to final adoption.

Summaries of input are included in Appendix C.

Common Elements of Alternatives

Three Alternative Concepts were produced. By looking at three varying approaches to development of the study area, the consultants and planning participants get a better sense of the range of possible solutions to the issues – the ‘book-ends’ of potential solutions.

A stakeholder and technical evaluation of these alternatives leads to selecting the best features of each concept, and incorporating these into draft and final recommendations.

Following Smart Growth Principles, the features below are common to all three alternatives considered.

Land Use Forms

Smart growth principles consider not just the type of land use, but also the **MIX** of land uses that create a complete community.

Therefore, the questions for Quinsam Heights / Nunns Creek are not about what form of housing, but what **MIX** of housing type will meet the objectives. The alternatives consider a potential range of housing types from single family through townhome, apartment, main street and perhaps even higher densities. All these housing types should be considered to see what sector of the community they could support.

Similarly, questions about commercial uses in Quinsam Heights / Nunns Creek are about how to incorporate walk-to uses that are complementary to the new neighbourhood, as well as drive-to uses that serve the entire City. Again, it is about **MIX** of commercial uses.

All three options show potential locations for three elementary and one middle school. This represents the maximum number of potential schools needed – actual number may vary depending on population at buildout.

Transportation

For transportation, again, ‘Smart Growth’ is about the **MIX** of transportation choices. Quinsam Heights / Nunns Creek needs to include good vehicular access, but also excellent provisions for transit, for cyclists and for pedestrians.

The City has adopted a Major Transportation Plan which identifies several important road network improvements in the Quinsam area. In developing the Smart Growth Implementation Strategy, these network improvements were re-assessed to determine whether *a)* they are still required, *b)* they are the best means of accommodating future traffic and transportation demands, and *c)* there are other road network improvements that are required in addition to or instead of those identified in the Major Transportation Plan.

This review has identified that a review of timing of construction of major roads is in order, in particular to do with the Willis to 2nd Ave road crossing of the Nunns Creek Valley. All options recommend:

- That completion of improvements to Willis Road from Hwy 19 to Petersen Road should proceed as planned.
- That extension of Willis Road from Petersen to 2nd Ave should be retained as a long term potential, but that construction of this connection should be deferred until later in the development of the City, and when traffic pressures demand it. That said, bikeway and utilities such as water mains associated with this corridor might proceed earlier as required.
- In the meantime, priority should be given to road/cycle improvements that connect the Quinsam Heights / Nunns area to 14th Ave and that improve roads as required that connect to 4th and extend to Dogwood and the hospital area.
- Cycle and walk connections at cycle grades (<5%) should be created from the Quinsam Heights / Nunns Creek neighbourhood across the valley to provide ready non-vehicular access to Carihi High School, using the City lands in the Nunns Creek Valley.

The relationship of the ERT greenway to road access and walk/cycle patterns in the neighbourhood was reviewed. All options recommend that the ERT should be retained as a recreational greenway for the great majority of its length. Further, in later stages of the plan implementation, when alternate roads are available, the ERT should be closed to vehicle traffic from Evergreen Road south to the Beaver Lodge Lands.

All three options envision some minor opening of the ERT just north of Evergreen, to provide a 'trailhead' of parking, washrooms and signage in this area. The same improvements may provide access to adjacent private property for a low density residential use.

Treatment of parts the ERT as a road / cycle combination vary among options.

Environmentally Strategies

All three options include protection of streamside riparian areas, wetlands, steep slopes and wildlife trees as anticipated in the City's Development Permit Areas. Protection of green space beyond that varies among options.

The Gas Tax funding and terms of reference also place strong emphasis on measures to minimize GHG emissions and protect clean air. A strategy is included to use evolving GHG neighbourhood planning approaches to influence the plan and set monitoring targets.

Conceptual Basis of Alternatives

The three alternative concepts that were considered attempted to identify the 'book-ends' of what Smart Growth might look like in this study area.

Three options were created for each of:

- Land Use and Green Space Amenities
- Transportation Patterns

Given the nature of the study area, it would be possible to 'mix and match' the land use and the transportation pattern alternatives.

Land Use Options

Three options were created for land use.

- Option A: Highway Focus: focused density near the Island Highway – concentrated at the corner of Willis and Hwy 19. Low density housing development extended right to the ERT in this option.
- Option B: Central Focus: brought the higher density residential core to focus on the corner of Fisher Road and Willis Road. This option also included more medium density area surrounding the high density core, and started to pull residential development away from the ERT, leaving a band of green space.
- Option C: Slopes Focus: placed the higher density core on the larger lots east of Petersen Road, with medium density distribution similar to existing zoning. This scheme had more green space along the ERT than Option A or B.

The features of each land use option are summarized below.

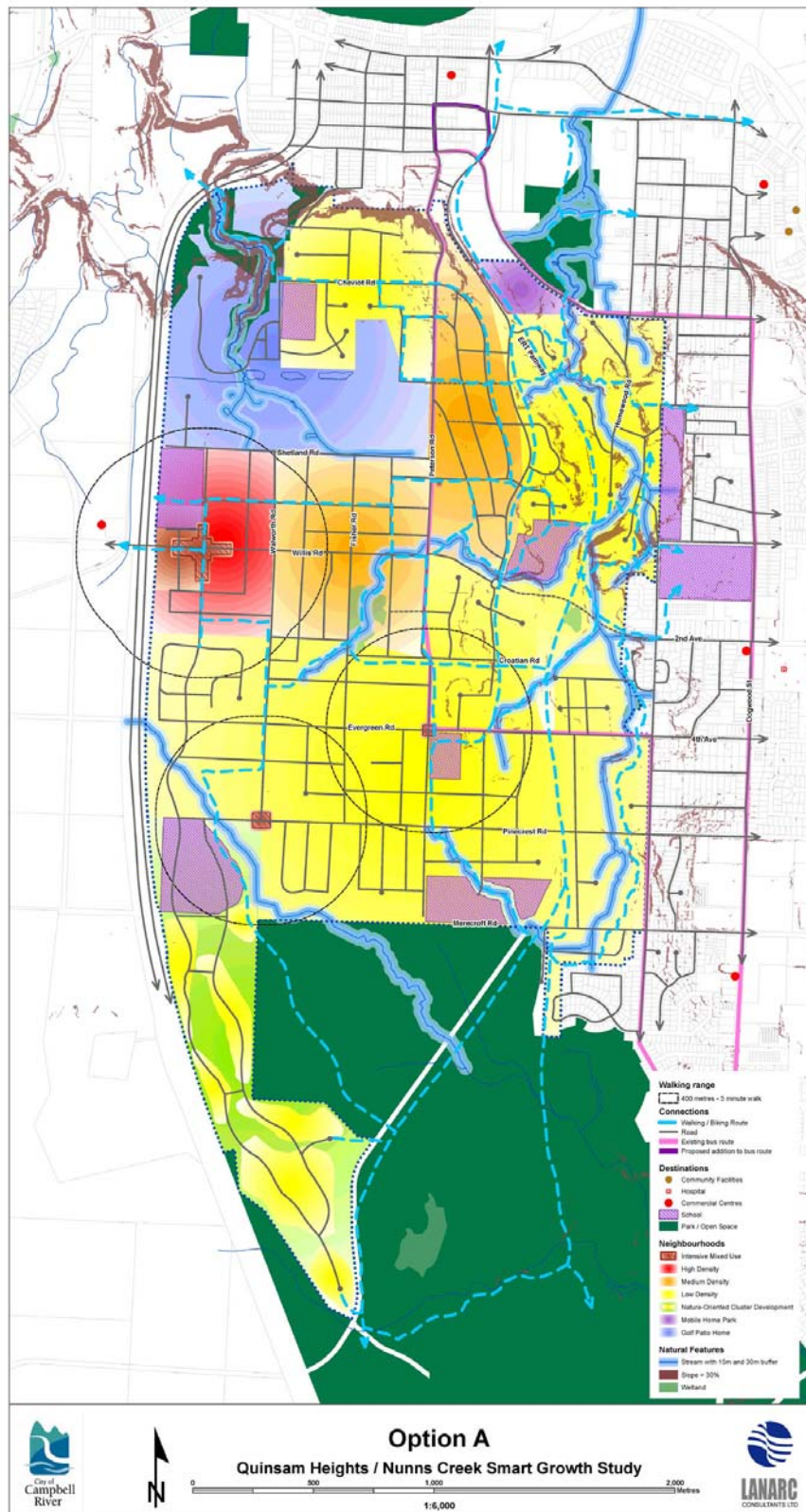
Option A: Highway Focus

Land Use Features

- High density (up to 4 storey apartment) uses and mixed use commercial are proposed to be concentrated at Willis Road and Hwy 19.
- Walk-to neighbourhood commercial areas are shown in two locations central to a 450m walking radius -at the intersections of Evergreen and Petersen Rd, and at Walworth and Pinecrest Road.
- Medium density (townhome) uses are concentrated where existing zoning allows – in the Willis/Fisher Road area and slopes east of Petersen and Shetland.
- Remaining site periphery areas are low density single family residential.

Public Amenities and Trails

- Riparian corridors of minimum width are protected along all watercourses in the plan area.
- Steep slope areas are protected by development permit, but subdivided into private property in low density residential areas.
- Beyond these key ESA areas and school/park sites, the remainder of the land is private development.



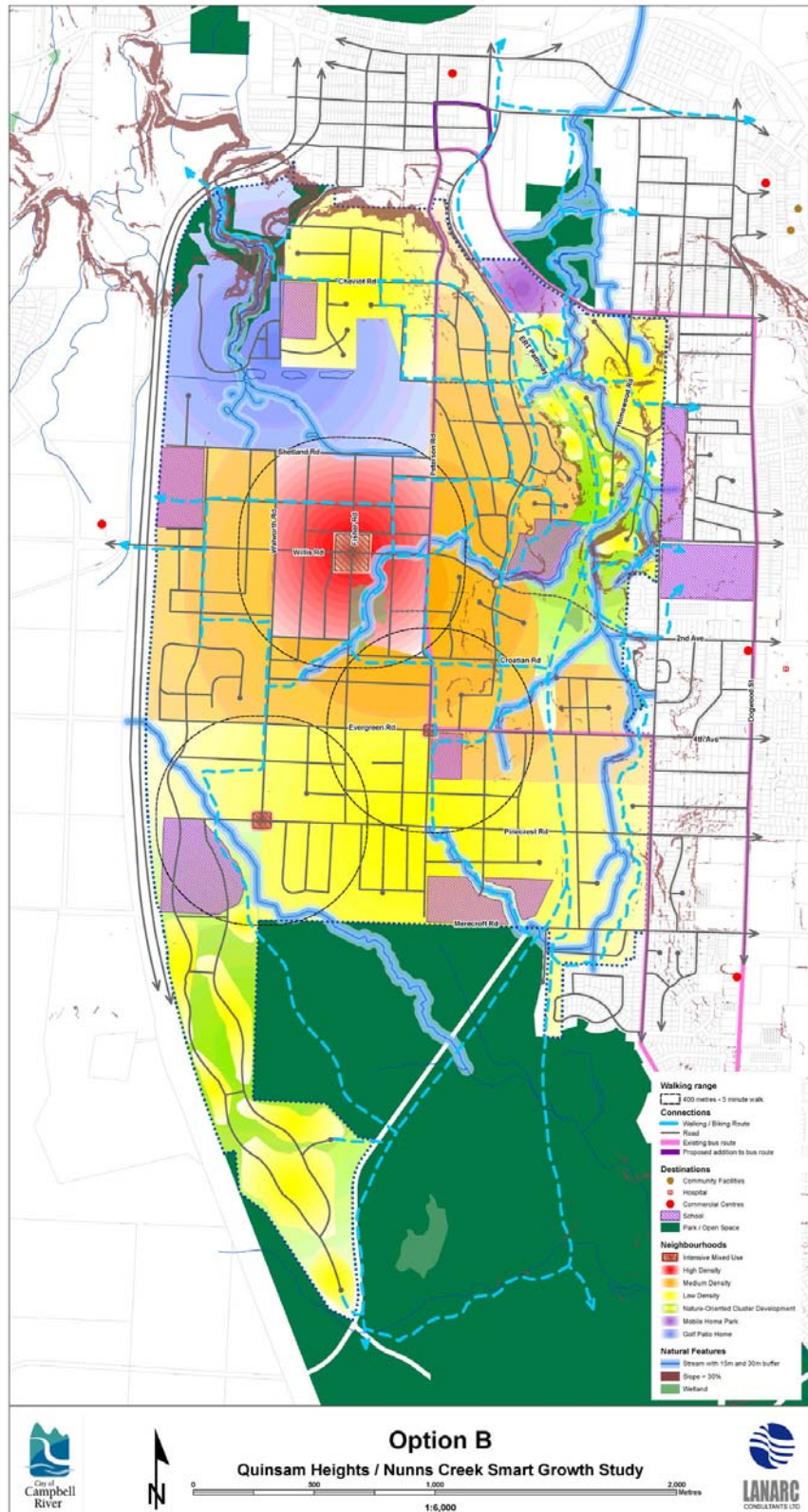
Option B: Central Focus

Land Use Features

- A central area surrounding Fisher and Willis Roads is the site of proposed high density (up to 4 storey apartment) uses and mixed use commercial.
- Similar to Option A, walk-to neighbourhood commercial areas are shown in two locations central to a 450m walking radius -at the intersections of Evergreen and Petersen Rd, and at Walworth and Pinecrest Road.
- Medium density (townhome) uses are allowed in a large area – from Hwy 19 and Willis, surrounding the proposed high density core, and extending over the ridge area and eastward to the ERT.
- Clusters of low density uses are positioned along ERT, with areas of wooded buffers included between the development clusters.
- Remaining site periphery areas are low density single family residential.

Public Amenities and Trails

- Like Option A, riparian corridors of minimum width are protected along all watercourses in the plan area, and steep slope areas are protected by development permit, but subdivided into private property between density clusters.
- Beyond these key ESA areas and school/park sites, the remainder of the land is private development.



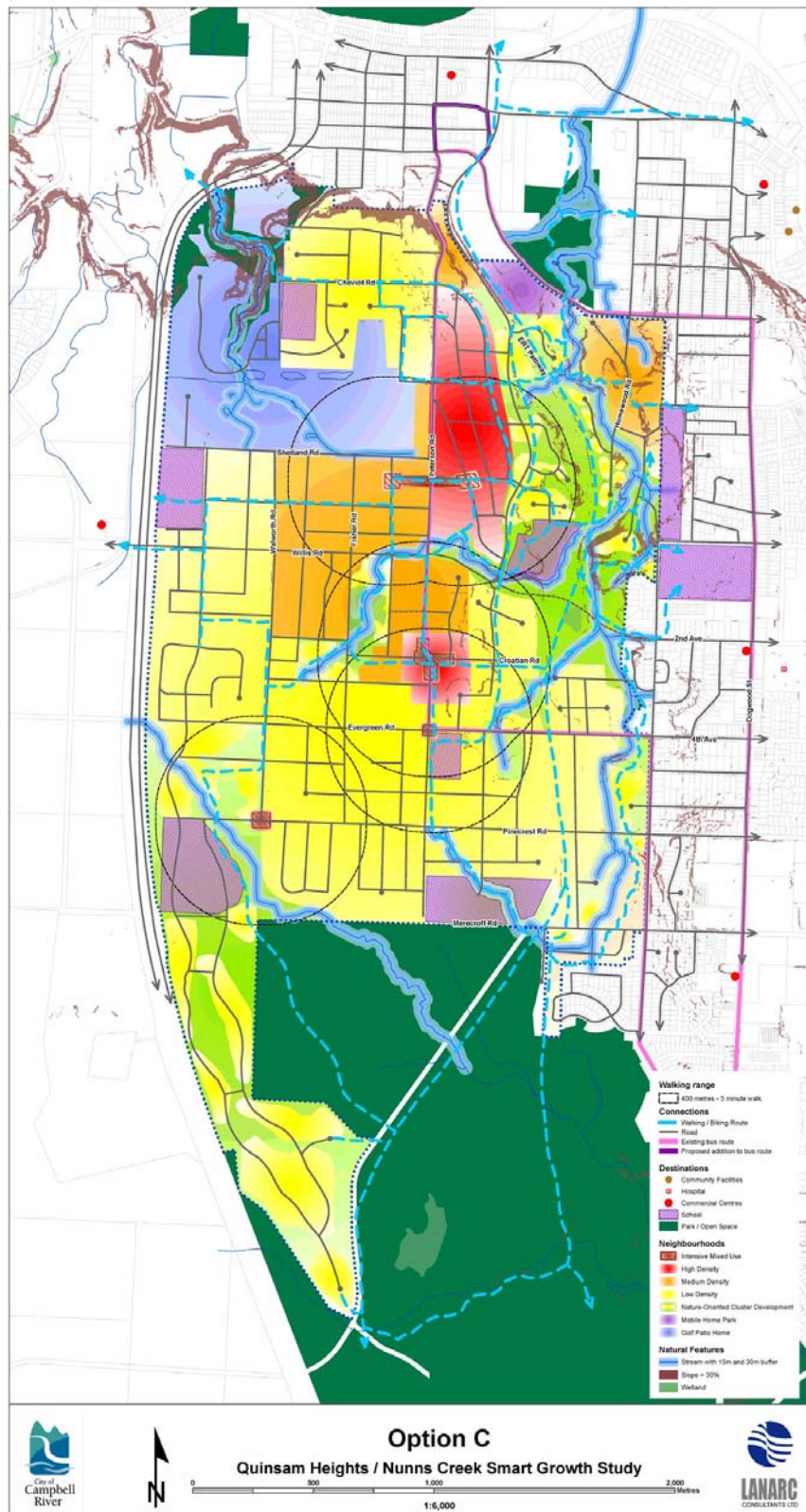
Option C: Slopes Focus

Land Use Features

- Lands east of Petersen Road, including large parcels in the Ridge, are the site of proposed high density (up to 4 storey apartment) uses and mixed use commercial.
- A 'Main Street' is proposed perpendicular to Petersen Road, to join new Petersen Road to the slopes.
- Similar to Option A, walk-to neighbourhood commercial areas are shown in two locations central to a 450m walking radius - at the intersections of Evergreen and Petersen Rd, and at Walworth and Pinecrest Road.
- Medium density (townhome) uses are concentrated in areas similar to existing zoning – generally surrounding the proposed high density core, but staying on the terraces above the hillsides at the ERT.
- Clusters of low density uses are positioned along the ridgetop parallel to the ERT, with areas of wooded buffers included between the development clusters.
- Remaining site periphery areas are low density single family residential.

Public Amenities and Trails

- Unlike Option A and B, areas kept in a natural state exceed the minimum. In addition to protected riparian corridors and watercourses, steep slope areas and the woodlands between steep slopes and the ERT are dedicated to public ownership as a part of rezoning for higher density up on the terraces.



Road Transportation Pattern

Three options were created for the pattern of main (arterial and collector) roadways.

- Option R1: Dispersed System

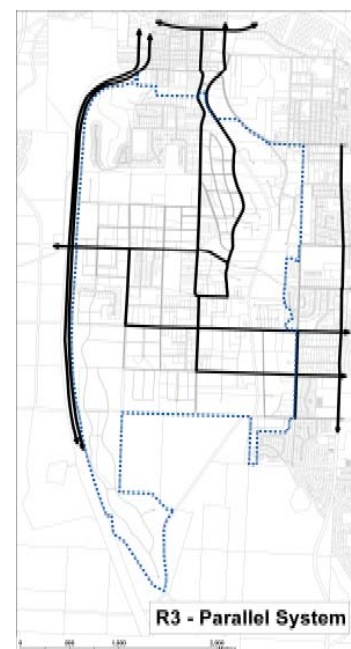
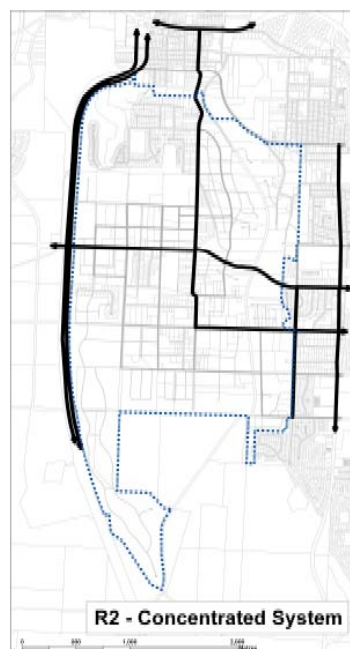
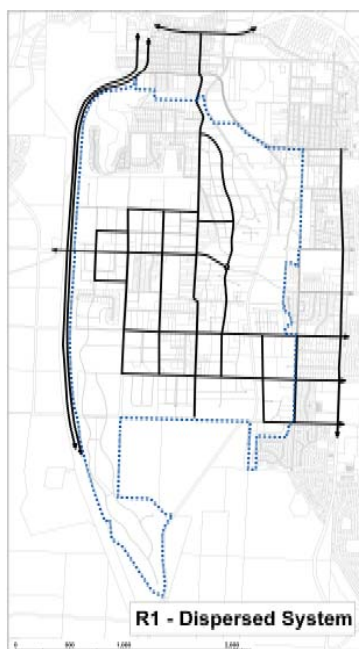
A 'dispersed' system of collector roads is pursued, wherein a 'grid-like' system of neighbourhood collectors is created. This provides redundant options to disperse traffic, so that no single road takes an excess of traffic load.

- Option R2: Concentrated System

This follows the current traffic plan, and envisions concentrating traffic on Willis, including the Willis extension to 2nd. Petersen and Evergreen Roads are also brought up to arterial status.

- Option R3: Parallel System

In this roadway pattern, pairs of roads run in parallel between each destination. A significant new road (the Ridge Road) would use part of the north section of the ERT to connect the new neighbourhoods to 14th, supplementing an improved Petersen Road. In this scheme each of these roads could be neighbourhood collectors rather than full arterials.



Stakeholder Comparison of Alternatives

The three Alternative Concepts, as well as background information, were reviewed at a Public Open House on March 27, 2008.

Results of the public input received are summarized in Appendix C. The following issues and related discussions were apparent:

- Respondents did not have a clear preference for the location of higher density areas among the options, or the for the choice of road pattern.
- Respondents supported a grid pattern of local roads rather than cul-de sac or exclusive (large lot) patterns.
- Strong support was shown for protecting environmental values, and for alternative transportation like cycling, transit, walking facilities.

Financial Input

G.P. Rollo has provided market and financial input into the review of Alternatives. Appendix B includes a preliminary letter of opinion. Key points include:

- In the short term, single family residential housing is still affordable in Campbell River, and this is the main market interest.
- Over the longer term, decreasing affordability will increase market response to multi-family offerings, with movement initially to townhome and eventually to apartment housing forms. Reserving land area for future apartment sites may be a challenge.
- Higher DCCs and development costs in the study area, when compared with alternatives in the City, will create a relatively slow development pattern in the neighbourhood.
- Highway commercial development at Willis and Hwy 19 could be regionally focused, and develop independently of housing development in the neighbourhood. However, it is recognized that this development would be car-focused and thus may not meet the Smart Growth or Greenhouse Gas Reduction objectives of the study.
- Village mixed use commercial-residential development in the neighbourhood will be slow to start, and more attractive in the mid to late stages of buildout as the local population is there to support it.

- Village commercial development would be most viable if at a main intersection and highly concentrated / visible. Although the corner of Willis and Petersen is mentioned, it is recognized that the creek ravine in this location is an ESA. A new intersection location may be required.
- Properties with water view will attract the highest values – initially for single family estate uses in later years as potential view apartments.
- Concrete construction or high rise is not seen as feasible for the foreseeable future.

Additional financial input is recommended in concert with proposed engineering infrastructure and servicing cost review, prior to final adoption of the recommendations in an amended OCP.

Introduction to Recommendations

After careful consideration of the three alternative concepts, the discussion of issues and the review of financial analysis, a recommended concept has been developed that blends the best features from each of the concepts.

The recommendations of this Smart Growth Study, as refined and approved by Council, will form a part of the Official Community Plan for the City of Campbell River.

For sake of incorporation into that plan, the Recommendations are formatted as Schedule G to the OCP. The attached document (Schedule G) in Appendix A includes the written recommendations.

The Recommendations are organized around the five Smart Growth Principles.

Table 2 compares the recommended concept to Smart Growth principles.

Stakeholder Response to Recommendations

The Draft Recommendations, as well as background information, were reviewed at a Public Open House on May 22, 2008.

Please refer to Appendix C for a summary of results of the public input received. Six response forms were received.

- Respondents favored the 'Mixed Use Village' in the vicinity of Petersen, including a concentrated 'Main street' component.
- Apartment style complexes at the height of land near Petersen were supported. Other land use distribution recommendations received support.
- The idea of using the portion of the ERT north of the power lines for a shared vehicle/cycle route connecting 14th to a Ridge Road received support.
- Opinions were split on roundabouts and the extension of Willis Road to 2nd.

Recommendations

Quinsam Heights / Nunns Creek

Smart Growth Implementation Study

Table 2: Smart Growth Performance of the Recommendations

Smart Growth Principle	Recommendations
1. Mix Land Uses	
- to promote walk-to commercial areas	Excellent
- sufficient residential unit count to support local retail/office	Excellent
- support a wide variety of age groups	Excellent
- support a wide range of income	Good
- include recreational opportunities within walking distance	Excellent
2. Compact Neighbourhood with variety of Transportation Choices	
- encourage walking	Excellent
- encourage cycling	Excellent
- encourage transit use	Excellent
- road links that provide alternative to highway, avoid dead-ends	Excellent
- connect to business areas	Excellent
- mitigate urban sprawl (regionally)	Good
3. Preserve open spaces, natural beauty and ESAs	Excellent
4. Utilize green infrastructure	Good
5. Foster a unique and inclusive neighbourhood identity	
- image to the island highway	Good
- image to the ERT	Good
- urban design quality and variety of spaces / experiences	Good

Next Steps

The terms of reference for the Smart Growth study call for draft recommendations based on a professional review of Smart Growth Principles, existing and potential conditions in the Study Area. There has been input from City Staff and a Steering Committee, as well as three public workshops.

The Recommendations will be brought before City Council, for comment and further input.

At time of writing, we recommend additional financial analysis of the recommendations, as follows, prior to final amendment of the OCP:

- That City engineering staff or appointed consultants prepare a servicing cost analysis of two scenarios representative of the study area: single family development vs. mixed use development in proportions outlined in the recommendations.
- That given the above servicing cost info, financial review and land use fine tuning of the recommendations be provided.
- That the City lead a review of engineering cost/ feasibility and the City / Senior Government role in partnering with developers on funding lower Nunns Creek channel / habitat improvements, an extreme flow stormwater diversion pipe, as well as the ERT portion of the 'Ridge Road' collector. Putting these facilities in place in a co-operative way may remove a substantial barrier to development in the neighbourhood.
- That with the above information in hand, as well as a decision to postpone construction of the Willis Road extension east of Petersen, a review of Quinsam Heights / Nunns Creek Development Cost Charge arrangements be completed. If DCC's can be reduced in the short term, or can be redirected to the short term projects above, again an impediment to implementation of the plan would be reduced.

This additional input may lead to minor refinements of the land use mix in the plan.

Once Council is satisfied with the recommendations, they should be incorporated into an update of the Official Community Plan. In the meantime, rezoning applications that respect the principles of the plan should be given fair consideration.

Limitations of the Plans

It is recognized that development applications may come forward with road patterns or land use distributions that vary from the specifics of the plans of this report. Such variations are expected and welcomed, provided that the general principles of the plan are upheld.

Appendix A

Schedule G to the OCP (DRAFT)

Quinsam Heights / Nunns Creek Smart Growth Plan

As a part of implementing its vision, the City has commissioned a 'Smart Growth Study' for the Quinsam Heights / Nunns Creek neighbourhood. The study has reviewed Smart Growth principles, and created recommendations on how to apply these principles to the Plan Area.

This plan applies to the area outlined on Map G1.

1.0 ENVIRONMENTAL FEATURES

1.1 Environmental Features and Development Permit Areas

Known environmental features in the Plan Area are summarized on Map G2a.

Table G1 provides a summary of the available environmental information for the plan area.

Readers should also refer to the Integrated Stormwater Management Plan for Nunns and Simms Creek Drainages.

Map G2b illustrates the larger patches of tree cover evident from the 2008 air photo. Approximately 35% of the study area has tree cover at the time of study in 2008.

Development permit requirements and guidelines from the Official Community Plan apply to the Quinsam / Nunns Creek area, and form part of this schedule. These include Environmental Development Permit Areas including Riparian Areas for Streamside, Bird Nest and Buffer and Hazard Areas for Steep Slopes and Floodplain.

2.0 SMART GROWTH PRINCIPLES & RECOMMENDATIONS

Smart growth principles and concepts have been articulated across North America as ways of achieving economically efficient, environmentally friendly and socially supportive development. Smart Growth is a collection of land use and development principles that aim to enhance our quality of life, preserve the natural environment and save money over time.

Smart growth principles ensure that growth is fiscally, environmentally and socially responsible and recognizes the connections between development and quality of life. Smart growth enhances and completes communities by placing priority on infill, redevelopment and densification strategies.

The following Smart Growth Principles apply to the Plan Area:

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- 3. Preserve open spaces, natural beauty and environmentally sensitive areas.** Smart development respects natural landscape features and has higher aesthetic, environmental and financial value.
- 4. Utilize green infrastructure.** Green buildings and green infrastructure systems are critical for the environment in the long run.
- 5. Foster a unique and inclusive neighbourhood identity.** Each community is unique, vibrant, diverse, and inclusive, and celebrates its natural and cultural heritage.

This Schedule to the Official Community Plan includes policies and maps that illustrate how these principles can be applied to the Quinsam / Nunns Creek area.

1. *Mix land uses.* The neighbourhood will have a mixture of homes, retail, business and recreational opportunities. Residents can choose to live, work, shop and play in close proximity.

Policies:

- ✓ When compared to past plans for this area, the objective of this plan is to increase the variety in housing and land use mix.
- ✓ Land uses should mix at a fine-grain scale, avoiding large expanses of any single land use type (e.g. single family residential, apartment residential, commercial) Map G3 provides a generalized land use plan for the area.
- ✓ The key to successful land use mix is the proportion of various land uses in the mix, and their relative location and distribution. Map G3 includes a graph with the target proportion of various land use forms for the neighbourhood overall. Provided that the overall mix and distribution of use is met, the intent of the plan is to allow reasonable flexibility on the location and boundaries of various use classes shown on the map, subject to successful rezoning processes.
- ✓ Land use designations should create a mixed-use neighbourhood centre (village) centred on the area of Old Petersen and New Petersen roads, as the focal point of the Quinsam Heights/ Nunns Creek neighbourhood. Refer to the Village Illustrations section on Page G(19) for more detailed policies and illustrations.
- ✓ To maximize opportunities for walk / cycle rather than car use, neighbourhood commercial should be provided within a 5 – 10 minute walking distance (400m – 800m) of residential. Map G3 shows locations for small scale neighbourhood commercial with ancillary residential uses, at:
 - Peterson / Croatian
 - Pinecrest / Walworth
 - Pinecrest / ERT area
- ✓ Mixed Use Work/Live areas are encouraged in the vicinity of Nikola and Willis. It is recognized that these areas may evolve in land use – with initial residential uses being changed to include more commercial components as the population of the neighbourhood increases. As these uses are at the ‘entrance’ to the neighbourhood, a very high standard of architectural and landscape finish is required, and traditional ‘strip mall’ or ‘sub-regional shopping centre’ is not acceptable. In addition to the Design Guidelines for Multi-Family and Commercial in the Official Community

Plan, the following form and character guidelines apply to the 'Gateway Mixed Use' shown on Map G3:

- Front yards shall be designated on Willis Road.
 - Buildings shall orient and front on Willis Road, with ready pedestrian access to mixed use/commercial from the proposed sidewalks of Willis Road. Buildings should create a 'Main Street' character along Willis Road, with front yard setbacks varying from a minimum of 2m to a maximum of 6m
 - Surface parking shall be behind buildings, and not highly visible from Willis Road. Main vehicle access should be from Nikola.
 - Cycle access from a fronting street to cycle parking shall be provided.
 - Pylon signs and drive-through commercial shall not be allowed.
 - Architectural, landscape and lighting detailing shall be to a high level, urban standard, designed to pedestrian scale and for pedestrian comfort.
- ✓ The land use designation of Medium Density residential for the area centred on Willis / Fisher remains. Densities in this area are targeted for a range of row house, patio and townhouse forms.
- ✓ Low Density residential areas are at the neighbourhood periphery. These areas would be duplex and single family forms, including compact single family.
- ✓ An area of Residential Estate between the Inland Island Highway and the Beaver Lodge Lands is shown on Map G3. Land Use policies for this area encourage:
- Inventory and preservation of wetland and stream riparian areas, in accordance with development permit requirements.
 - Retention of select stands of woods or noteworthy vegetation, and trail linkages that join up to the trails system in the Beaver Lodge lands and beyond.
 - Clustering of housing development to avoid the above preserved areas. The intent is that the overall number of units would follow the zoning, but that more compact forms of development (small lot residential, patio home and townhome) could be included to allow a greater variety of housing form on this parcel, for a greater range of income levels and ages.
 - As a guideline, a maximum of 66% of the land area would be estate scale single family lots.

- ✓ Some areas have constraints related to steep slopes, eagle trees, riparian areas or narrow terraces beside the ERT greenway. In these locations, use of narrow local road standards combined with T turnarounds should be considered to service hillside/trailside housing. These innovations would reduce the impacts of development on hillsides or environmentally sensitive areas. Emergency access from the ERT may play an important role in supporting these narrow hillside road standards.
- ✓ To encourage a jobs:residential balance, in addition to the proposed commercial areas, City policy should allow home occupation for appropriate office uses in all the zones of the plan area.
- ✓ Urban agriculture shall be encouraged, provided that it is compatible with adjacent and evolving residential uses in the area. Specific policies for agriculture include:
 - Growing of vegetables, small tree fruits and similar food production for personal or neighbourhood use is encouraged in all land uses in the area, including on roof tops or terraces of buildings.
 - Multiple family and institutional land uses are encouraged to include provisions for food production plots and horticultural therapy in their landscape development and strata operations.
 - Keeping of large livestock (e.g. horses, cattle, sheep) should be restricted to parcels larger than 1 Ha, with buffers required between these uses and adjacent residences. Keeping of small livestock (e.g. chickens, rabbits) should be restricted to the low density and residential estate areas, once the zoning for these uses is put in place. Livestock should not be kept in the Village Centre and Corner Store designations.
- ✓ For green space and other institutional policies, see Item 3 below.

2. *Build a compact neighbourhood with a variety of transportation choices.* Smart growth neighbourhoods are designed to encourage walking, cycling and transit use as an alternative to private vehicles, and to support public health and fitness. Road and sidewalk systems are interconnected, minimizing dead-ends and cul-de-sacs, to encourage walking to daily activities, to ensure transit is viable and so that local businesses are supported.

Policies:

- ✓ Map G4 shows schematically the proposed walk/cycle routes for the plan area. Development applications should provide walk/cycle connections that are effective at creating the linkages shown on these plans, although it is recognized that routes will vary during detail planning and design.
- ✓ Cyclists are simply human-powered vehicles, and as such, all roads are potential bicycle routes. In order to facilitate and encourage bicycle travel, specific roads should be identified as bicycle routes, and in the case of collector and arterial roads, should incorporate bicycle lanes or a similar facility appropriate for the specific road conditions. These route designations and facilities should be supplemented with crossing enhancements at major intersecting roads, signage and way-finding tools, and other suitable treatments. Roads which are identified as bicycle routes are generally more conducive to bicycle travel due to traffic volumes, grades, access to major destinations, and other factors. Applicants are required to show how road standards would accommodate cyclists on cycle routes identified on Map G4.
- ✓ The ERT alignment shall remain as a dedicated part of city-wide Recreational Greenways Loop:
 - The ERT will be maintained as a continuous fire access lane, with strategic connections from the ERT to provide alternate access to adjacent subdivision roads. This will allow greater flexibility in adjacent subdivision design.
 - If a stormwater extreme flow diversion pipe is installed, alignment along the ERT may be an appropriate location, as it is below the majority of the development and associated stormwater detention ponds, and has a constant gentle fall towards the Campbell River.
 - Trailhead facilities with limited parking, washrooms and signage should be considered at key locations e.g. near Beaver Lodge lands, near Evergreen, and near Homewood. Parking at these facilities may be locked off at night.

-
- ✓ Walk-cycle multi-use (major) pathway connections to existing and future school sites are a key objective. Linkage to encourage walking from the neighbourhood to Carihi is of the highest priority. Design guidelines include:
 - Maximum grades of major walk / cycle linkages should not exceed 5%, whether on or off-road. If short sections of cycle route must exceed 5%, the length and grade of these exceedances will be subject to careful design review of the extent and location, should not exceed 8-10%, and shall require a support letter by a transportation planner with expertise in walk and cycle standards.
 - Preference should be given to facilities that are separate from travelled roads, although the trail may share the road right of way.
 - Continuity of the walk/bike system between and through developments is critical. Plans and grade profiles of walk/bike linkages should be a key requirement of development submissions, done before or in concurrent with road, subdivision or site plans. Approvals for subdivision preliminary layout approval or architectural site plan approval shall not be provided until an acceptable walk/bike route plan has been provided by the applicant.
 - Permanent easements shall be required to ensure public walk/bike access across strata developments.
 - ✓ Minor pathways would provide more nature-oriented trails for passive recreational use. These may be soft surface and include grades more steep than major walk/cycle routes, generally less than 10% grade with local short sections not to exceed 12%.
 - ✓ Transit stops should be provided at the approximate centre of each 450m walking radius shown on map G5 - located generally associated with neighbourhood commercial areas.
 - ✓ Road systems will be designed to distribute traffic rather than concentrate it. Map G5 provides a general road framework :
 - Petersen, 14th/Homewood and Dogwood are surrounding primary roads (arterials).
 - Willis will be upgraded to an arterial with high aesthetic qualities (as per existing design) from the Inland Island Highway to Petersen. The planned extension of Willis from Petersen to 2nd will be kept as a lower priority, with a future decision to construct based on traffic demand in the future.
 - Secondary (collector) roads will be provided by a system of 'redundant links', including Evergreen, Pinecrest, Shetland, Walworth, Fisher.

- A new 'Ridge Road' neighbourhood collector is shown connecting the proposed village to 14th and Homewood. To do this, a northern section of the ERT is converted to a mix of road and adjacent bikeway. At the north end of the Ridge Road at 14th / Homewood, the alignment may follow the ERT right of way, or may curve to extend through private commercial property to the east, or both. The bikeway also extends up the east side of the Ridge Road to connect the Village and the ERT cycle systems together, to service students and the broader community. See Map G5, G10 and conceptual roadway sections on G11.
- Local roads will also be a system of 'redundant links'. Design of road systems in the area will use the 'Design Standards 2007' once finally amended and adopted, including provisions for infiltration and street trees wherever feasible. Alignment and design of all local roads will include traffic calming measures such as curb extensions at intersections, minimum pavement width for the traffic load, and marked or signalized crosswalks.
- ✓ Roundabouts are the preferred form of intersection control in cases where traffic signals or all-way stops would otherwise be considered.
Roundabouts offer several important benefits, the most significant of which is improved safety for all road users, including pedestrians, cyclists and motorists, as measured by reduced numbers and severity of crashes, as well as reduced vehicle speeds. Roundabouts also reduce environmental impacts such as noise and greenhouse gas emissions, and require fewer lanes on approach roads, which means less asphalt and reduced rainwater runoff.
- Roundabouts will be used for key intersections, with the exception of Willis/Petersen and Petersen/14th, where light signalization may be used.

3. *Preserve open spaces, natural beauty and environmentally sensitive areas.* Smart development respects natural landscape features and has higher aesthetic, environmental and financial value.

Policies:

- ✓ A comprehensive greenway network that is either in public ownership or protected from development by covenant is proposed, as indicated on Map G6. The core of this area includes:
 1. Riparian areas along Nunns Creek, Haig-Brown Kingfisher Creek, Simms Creek and tributaries;
 2. Steep slopes as triggered by the City's DP guidelines (>30%)
 3. Potential sites for key stormwater detention ponds – generally associated with each large development parcel or tributary drainage area. Not all required ponds are shown.
 4. Potential neighbourhood park or school sites. The number and location of these sites may vary based on property negotiations by the City or the School Board.
 5. a minimum natural area buffer with native woods of 15m between the property line of the ERT and adjacent urban development. This would apply along the length of the ERT, except where the ERT is converted to travelled road near 14th/Homewood, in which case the buffer would be a minimum of 5m between the property line of the ERT and adjacent urban development, with native woods in this open-road situation provided either by retaining existing or new planting. Provision of this natural buffer shall be gained by rezoning negotiation, or, where required, by parkland dedication.
- ✓ The Parks Strategic Plan policies apply to this neighbourhood. Realization of these policies might be accomplished by:
 6. Purchase of a neighbourhood park site west of the ERT, in a central location. Ideally this site would be associated with a new elementary school.
 7. Purchase of a neighbourhood park in the Fisher/Willis road area.
 8. Both of these sites may also incorporate construction staging (short term) and stormwater detention facilities (permanent).
 9. Both sites might be suitable for purchase of larger areas of land, detail design and rezoning, and sellback of development parcels.
 10. The Strategic Parks plan also anticipates a major sports field park on City land at Merecroft and Peterson. This land should be reserved for that purpose.

- ✓ Depending on population and demographics at buildout, several additional school sites may be required to supplement Ripple Rock Elementary. The number and location will be determined as the community develops. Potential locations are:
 - 11. Near the proposed Village Centre, ideally associated with the neighbourhood park and overlooking the ERT valley.
 - 12. Evergreen school site.
 - 13. Site in the vicinity of Willis and Nikola (potential middle school?)
- ✓ The IWMP and subsequent discussions with City and DFO staff have led to a summary of key environmental issues in the neighbourhood. Refer to the table 'Nunns Creek Critical Habitat Area' on page G (3), which describes issues and solutions associated with the points below. Most of these solutions will involve public works, but where development applications overlap the lands or issues listed, the development application should incorporate solutions to the issue:
 - 1. Wetland / sediment deposition area between Homewood and 16th, include 16th Ave culvert crossing – major flow and sedimentation issues to be addressed, habitat restoration needed.
 - 2. Ditch along ERT draining into Maple St storm sewer system. – ditch consolidation and habitat improvements.
 - 3. West end of 7th, Otter and Homewood Roads, and 4th – detention / water quality improvements, fish barrier.
 - 4. Upper (Willis) area of Nunns Tributary 3. – install fish barrier at Peterson, but still address water quality / quantity above Peterson.
 - 5. West end of 2nd Ave. – water quality and large organic debris needed (LOD).
 - 6. Southwest Arm of Nunns above Evergreen – water quality treatment needed.
 - 7. Headwater of Nunns at City property – diversion of stream along Peterson / Merecroft is supported.
 - 8. Simms Creek – maintenance and enhancement of existing.
 - 9. Simms headwaters at IIH – needs wetland enhancements and riparian restoration.
- ✓ Two eagle nests have been identified in the study area. These will be managed in accordance with existing DP guidelines in the OCP.

4. *Utilize green infrastructure.* Green buildings and green infrastructure systems are critical for the environment in the long run.

Policies:

- ✓ The IWMP and City Engineering Standards 2007 introduce stormwater source controls. While all source controls will not be appropriate in all areas of the neighbourhood, there are several that can be applied throughout, even in areas of poor soils, including:
 - Absorbent landscape (minimum topsoil depth / standards).
 - Maximum impervious area (promotion of under-building parking).
 - Roadside and parking area infiltration swales.
 - Pervious paving of surface parking areas or single family driveways.
 - The above stormwater source controls are designed to promote water quality and to maintain stream base flows in dry months. It is recognized that surface stormwater detention ponds will still be required to meet the stormwater criteria for flood control. Where stormwater source controls are not installed, it is also likely that the size of required detention ponds would increase dramatically, to meet base flow requirements.
- ✓ Bill 27 introduces the ability of the local government to write development permits to encourage energy and water conservation. Although beyond this plan, recommended policy is to apply these measures to the Quinsam Heights / Nunns Creek neighbourhood, and the City beyond, when they are written. These development permits might address:
 - Outdoor landscape and irrigation standards and management, including design of 'hydrozones' of high, medium and low water use areas on development sites, with design of planting, soils and irrigation to match the hydrozone class.
 - Policies and standards (in co-operation with Provincial building agencies) to encourage roof water reuse for toilet flushing, laundry and outdoor uses.
 - Solar orientation, roof eyebrows or overhangs, solar access and related planting design to encourage passive energy conservation in buildings.
 - Standards for energy performance of buildings.

- ✓ Bill 27 also introduces a requirement that OCPs written after 2010 include greenhouse gas (GHG) emission targets. The Quinsam / Nunns Smart Growth plan starts towards that requirement, by:
 - Promoting infill development where existing sanitary and water infrastructure are in place, and in a location that is geographically close to major job centres and downtown.
 - Encouraging concentrated higher density residential uses, as a part of a broad mix of density. Note that the encouragement of multi family building forms with shared party walls will significantly reduce the energy demand and related GHG demands of buildings.
 - Mixing commercial / institutional and recreational uses in close proximity to residential areas (within 450m walking radii);
 - Incorporating walk, cycle and transit opportunities to link key uses; In the short term, providing walk/cycle links to the existing high school, and to future schools in the long term;
 - Maintaining the ERT as a major walk/cycle link, as well as a potential long-term rail transit corridor;
 - Minimizing the amount of arterial and collector road pavement, and associated embodied energy;
 - Encouraging construction waste management systems to reduce landfill GHG;
 - Encouraging re-use of local topsoil and organic materials, to reduce trucking costs, with attendant stormwater management benefits.
 - Requiring a minimum tree cover to be conserved or reinstated (see below).
- ✓ The Quinsam / Nunns Creek encourages the City to adopt policies for microclimate amelioration (winter winds, summer cooling) and related energy conservation. Guidelines for this measure include:
 - Requiring (by the plan maps and policies) that a minimum of 20% of the plan area be set aside as protected green space, with the majority of that in native forest.
 - When a Development Permit for Energy Conservation, or for Water Conservation, is put in place, including the following guidelines:
 - that all development parcels must provide a minimum of 40% of tree cover in that portion of the site that is not covered by buildings. Tree cover should be defined as projected tree or shrub leaf canopy, measured in plan view, estimated at 15

-
- years after planting by a certified arborist or landscape architect.
 - That landscape plans should respect principles of passive solar heating, with deciduous trees located on sunny side of buildings, and evergreen trees located on the shady or windy side of buildings.
 - The effect of these two measures is to create an average tree cover over the plan area of 35%, which approximates the existing tree cover. Table G2 summarizes the existing tree cover in the plan area.
- ✓ With the above elements of the plan addressing energy use and Greenhouse Gas (GHG) emissions, the projected performance of the plan is estimated in Table G3.
- By two different measures, the projected reduction in GHG by adopting this plan in contrast to a traditional single family suburban plan is in the range of 38,000 - 40,000 tonnes of CO₂ / year reduction, at buildout.
 - As a minimum target, this plan recommends a target reduction in GHG of 33% at project buildout, when comparing a traditional suburban plan to the proposed plan. This would represent a GHG reduction of approximately 2871 kg CO₂ / unit / year reduction. At buildout of 10,935 units, this would represent approximately 31,394 tonnes CO₂ / year reduction.
 - Monitoring of achieving this target should be done once every five years during the life of the plan. Monitoring methods will evolve quickly as attention to GHG and climate change increases. Pending more sophisticated monitoring systems, the City would review and estimate the data fields shown in yellow on Table G3, and insert current data to measure progress towards the target of a 33% reduction in GHG emissions when compared to a traditional suburban single family detached plan.

Table G3 **Greenhouse Gas Emissions Reduction Estimates**

Prepared by Richard Drdul, 16 October 2008

Modifiable inputs are indicated with yellow shading

Estimate #1: Reduction due to land use pattern and road network configuration

	8,700 kg CO ₂ equivalent/year/dwelling unit, conventional suburban development, inner suburbs (1)
–	5,000 kg CO ₂ equivalent/year/dwelling unit, neo-traditional development, inner suburbs
i)	3,700 kg CO ₂ equivalent/year/dwelling unit reduction
	43% reduction
	10,935 Number of dwelling units
X	3,700 kg CO ₂ equivalent/year/dwelling unit reduction (i)
	40,459,500 kg CO ₂ /year reduction
	40,460 tonnes CO₂/year reduction

Estimate #2: Reduction due to modal shift to transit, cycling and walking + reduced automobile trip lengths due to road network configuration

	10,935 Number of dwelling units
X	10 Motor vehicle trips/weekday/dwelling unit (2)
	109,350 Motor vehicle trips/weekday
X	338 Weekday equivalents/year
ii)	36,960,300 Motor vehicle trips/year
iii)	58% dwellings within 400 m walking distance of commercial uses and major destinations
	28% dwellings in 400–800 m walking distance of commercial uses and major destinations
	14% dwellings beyond 800 m walking distance of commercial uses and major destinations
iv)	8% modal shift for dwellings within 400 m walking distance
	4% modal shift for dwellings in 400–800 m walking distance
	1% modal shift for dwellings beyond 800 m walking distance
	5.9% net modal shift from automobile trips to transit, cycling and walking (iii x iv)
X	36,960,300 Motor vehicle trips/year (ii)
v)	2,180,000 motor vehicle trips/year reduction
X	7.5 km average trip length
vi)	16,400,000 motor vehicle km/year reduction
	0.25 km average reduction in automobile trip lengths due to redundant road network pattern
X	34,780,300 Motor vehicle trips/year remaining (ii – v)
vii)	8,700,000 motor vehicle km/year reduction
	25,100,000 motor vehicle km/year reduction (vi + vii)
X	2.360 kg CO ₂ equivalent/km (3)
	38,700,000 kg CO ₂ /year reduction
	38,700 tonnes CO₂/year reduction

(1) Source = Greenhouse Gas Emissions from Urban Travel: Tool for Evaluating Neighbourhood Sustainability, CMHC and NRC, 2000

(2) Source = Trip Generation Manual, 7th Edition, ITE, 2003

(3) Source = Environment Canada, 2005

5. *Foster a unique and inclusive neighbourhood identity.* Each community is unique, vibrant, diverse and inclusive.

Policies:

- ✓ The character of the existing Quinsam Heights / Nunns Creek area is dominated by the natural landscape. This plan will maintain key features of the natural landscape, including:
 - Forest backdrop of the Beaver Lodge lands.
 - Forested stream corridors of the Nunns, Simms and Haig-Brown Kingfisher creek systems.
 - Steep slopes and ridges, in particular those forming the Nunns Creek and Haig-Brown Kingfisher Creek valleys.
 - Green space corridor along the ERT, in particular in the Nunns Creek valley.
 - Existing Berm and Vegetated buffer between development and the Inland Island Highway
 - Existing golf course.
- ✓ As the neighbourhood is developed, special 'landmarks' should be created, with careful design and construction attention, at:
 - Intersection of the Inland Island Highway and Willis Road
 - Intersection of Willis and Peterson Road
 - Proposed Village commercial area – village square, village clock, etc.
 - Entrances to the ERT corridor.
 - All roundabout central islands.
- ✓ Key 'corridors' that deserve careful design and construction attention to set the character and quality of the neighbourhood include:
 - Willis Road corridor
 - Village Main Street
 - Petersen / Pinecrest Road at commercial / mixed use areas
 - ERT corridor
- ✓ All roads other than lanes in the study area should be complete with street trees and sidewalks.

3.0 VILLAGE POLICIES AND ILLUSTRATIONS

Policies:

The extent of the proposed 'Village' mixed use area is shown on the generalized land use map G2.

Map G7 provides a more detailed land use designation for the Village area, at a larger scale.

It is recognized that Village land use designations, street alignments and zoning designations may vary from these concepts, provided that the underlying principles are reflected in detail development proposals.

Land use and transportation principles that apply in the Village area are:

- ✓ A pedestrian-oriented village core of mixed use is outlined in the area near Petersen and Shetland. Guidelines for this area include:
 - Old Petersen road at Willis Road should be closed and converted to walk/cycle only greenway. This will eliminate a dangerous intersection and also allow regeneration of riparian area for the adjacent creek. The proposed main street shown would replace this link. The main street route would extend to link to a proposed Ridge Road neighbourhood collector (see Map G10).
 - As development / redevelopment takes place in the Mixed Use + Commercial area, proposals are encouraged which include a retail / service or office component on the ground floor, with residential above.
 - Zoning should encourage a density up to 50 uph plus ground floor commercial. Heights up to 4 storeys are anticipated. Rezoning for up to 6 storey heights will be considered based on the public amenities offered in the proposal, and in locations at the height of land where these higher buildings would not unduly restrict views to the water. Inclusion of work-live, loft or flexible buildings that may morph from residential to commercial uses are encouraged.
 - A continuous retail frontage, with minimum breaks in retail streetwall, is encouraged along a new 'Main Street' between New Petersen Rd and Old Petersen Road. This would occur in the only undeveloped property that spans these two roads, just south of Shetland.

- Where retail occurs, a zero front yard setback is encouraged. A C2 zone may be appropriate, which would allow for the street-oriented retail, residential above, and congregate care uses in addition.
 - To promote market viability, preference in rezoning to C2 should be given to sites that are adjacent to the proposed Main Street in the Village Core area. Existing residential-occupied sites along new Petersen road in this area may be entertained for rezoning to commercial late in the buildout stages, after the proposed new Main Street is fully occupied.
 - Lands that abut the existing golf course may include residential, commercial, or resort uses that front on or overlook the golf course, as well as these uses being publicly accessible to or fronting Petersen Road.
 - Rezoning of a site to accommodate a medium scale grocery store in the Village is encouraged, at an intersection with or close to the proposed Main Street. The store may include residential above if desired.
 - Parking should be underground whenever feasible. Surface parking should be behind retail or residential uses, with easy access to commercial uses and to the main street sidewalks.
 - All buildings / parking areas should have provisions for bicycle access and parking.
 - Changes to the zoning bylaw are encouraged that would reduce parking requirements for developments that provide permanent access to one or more shared co-op cars for use by all residents.
 - Designs for village projects should include an urban standard of streetscape, sidewalk design, street trees, pedestrian scale lighting and signage, banners, flowering plants, and other urban design features to create a highly attractive pedestrian experience.
 - A high amenity transit stop and shelter should be central to the area, with continuous pedestrian walk / sidewalk to connect it to neighbourhoods, and with cycle parking nearby.
- ✓ A mix of high, medium and low density residential development is shown on the terraces to the east of Petersen Road. Land use and transportation principles for these areas are:
- In concept, this plan reduces anticipated development on the slopes and narrow terraces near the ERT greenway, and instead 'transfers' this development potential up to the wide terraces and vacant lands close to the Village centre. Higher density areas are

encouraged close to the Village core, with gradually decreasing density as one moves away from the core.

- A potential location for an Elementary School is shown, with adjacent area for play areas and ball diamond. A proposed higher density area is shown nearby.
 - Higher density areas are envisioned as apartment style buildings, with a 3-4 storey height, or 6 storeys if acceptable public amenities are created and views are respected, and density up to 95 uph (RM3).
 - Medium density areas are townhome or patio homes with a density up to 50 uph (RM2).
 - Low density areas are recommended to be a variety of single family and duplex housing densities, including small lot housing and estate housing. Densities in the areas would be up to 25 uph. (R zones).
- ✓ Greenspace and trail networks in the Village are shown consistent with the higher level maps G3 and G4. Map G7 also shows more detailed walk/cycle connections that allow easy access with respect to desire lines and terrain. It is critical that walk/cycle routes join cul-de-sac or other street ends, and that routes chosen avoid slopes greater than 5%, so that the routes are continuous and highly usable. Key linkages include:
- The ERT route.
 - Walk/bike parallel to the Ridge Road neighbourhood collector, connecting the neighbourhoods to the ERT, and also to the schools and village core.
 - Walk/bike routes providing as direct a route as possible from the new development to Carihi High school.
 - A mid-terrace north –south walk connection that follows the contour to provide access from the adjacent housing towards the Golf Course Club House and beyond to Ripple Rock school, and also to the future elementary school and the Village core. This route would avoid users having to follow the Ridge Road down a steep slope and then having to climb back up slope to get to home or destination.

Visualizations:

A set of three dimensional graphic illustrations have been completed to illustrate how the policies might influence development. Panels G8 a), b), c), d) and e) are conceptual illustrations, and should not be interpreted as binding policy.

The pie chart on Panel G8 a) provides a general analysis of the split of unit type illustrated in the plan and visualizations. This pie chart is for illustration only.

It is recognized that Village land use designations, street alignments and zoning designations may vary from these concepts, provided that the underlying principles are reflected in detail development proposals.

4.0 STORMWATER INFRASTRUCTURE CONCEPTS

The plan area is potentially well serviced with water and sanitary sewer, with local extensions required associated with development.

However, the plan area is not well serviced for stormwater infrastructure. There are significant fisheries values in Simms and Nunns Creeks that need to be protected. There are also significant erosion, sedimentation and flooding risks and issues in the Nunns Creek system.

Integrated Stormwater Management Plans (ISMP) have set out stormwater management criteria for development in the Nunns Creek and Simms Creek areas. Development is expected to manage its stormwater to meet the criteria, including both detention of flood flows, and sufficient infiltration to support base flows. This plan supports and incorporates the ISMP policies, and related requirements for stormwater best management practices in the Design Standards 2007 or as amended.

In the hydrology of typical urban streams, including Nunns Creek, it is important that both the summer base flow and the annual flood flow be retained after development – to support summer fish and to maintain/scour a stream channel in flood events.

However, a significant issue is providing detention facilities large enough to store adequate rainwater volume – given that urban development tends to increase the volume of runoff in the watershed due to reduced evapotranspiration and infiltration associated with loss of tree and soil cover. Storing adequate volume in detention ponds can require a significant land area, which precludes development potential but also potentially causes environmental disturbances in creating the ponds, and in allowing the stored water to warm.

At the same time, tidal influence and sedimentation in the Nunns Creek Park area, combined with needed improvements to culvert crossings of roads in this area, are increasing risks of flooding and fish habitat impacts in the lower watershed. The ISMP and related studies have recommended culvert replacement and habitat improvements in the lower watershed area, but funding and jurisdiction for these improvements is challenging.

Therefore, as a supplement to the ISMP requirements, there is merit in considering the role for an extreme flow diversion pipe to keep the appropriate range of damage-causing extreme flows out of Nunns Creek, and to bypass them direct to the Campbell River.

Such a diversion pipe would not eliminate the need for detention ponds for each parcel – but it could reduce the size required. There also would be flood events that would rely on overland flow, just as would have happened pre-development. But a diversion pipe may play a key role in reducing the ‘wear and tear’ common erosion, sedimentation and flooding in Nunns Creek associated with urban development and moderate storms. A diversion pipe may also reduce the need for culvert replacements at existing roads near Nunns Creek Park. At the same time it is important to be clear that on-site stormwater infiltration source controls should be utilized to their maximum capacity as per the ISMP recommendations, with the balance of ½ of the Mean Annual Rainfall retained on-site by

detention. The role of any diversion pipe would be management of runoff above these levels.

A related concept that is current City plans support the construction of two large community detention ponds associated with the Willis Road extension to 2nd. These would provide stormwater storage for both proposed roadworks and for southwest areas of the Nunns Creek watershed. However, the construction of these ponds is not certain, and their footprint has an impact, short-term at least, on the Nunns Creek valley.

A second significant issue is the timing of construction of a diversion pipe and/or centralized community detention ponds. If proposed community stormwater facilities like these were not in place prior to urban development, then early developers are forced to build detention ponds to store the entire required volume, and all or part of this volume would not be needed after completion of the diversion pipe and/or community detention ponds.

This issue requires further analysis, and is beyond the scope of this plan. The Nunns Creek ISMP anticipates additional stormwater modelling and refinement of the plan. It is recommended that the next steps in the Nunns Creek ISMP modelling be taken. That review should include consideration of the concepts below.

Concepts:

- ✓ Map G9 shows conceptually the alignment of a Extreme Flows Diversion Pipe along the ERT, which generally has a 2% grade towards the Campbell River. This location would be gravity fed below the majority of development and related detention ponds.
- ✓ Conceptual location of potential small scale detention ponds are shown schematically on Map G9. These are location concepts only – the ponds are not sized. Additional pond locations may be required.
- ✓ The City also has land and plans for district –level detention ponds associated with the Willis Road extension. The role of these lands and ponds should also be revisited if Willis Road is not extended in the short term.
- ✓ In addition to an overflow outlet from each detention pond to the extreme flow diversion pipe, there would be a need for a low-flow outlet from each detention pond to supply clean water for base flow and channel maintaining flow to Nunns Creek and tributaries.
- ✓ If shared funding could be found, pre-development construction of the extreme flow diversion pipe, or other alternatives that would reduce detention and off-site stormwater costs, in particular for the proposed 'Village' area, would make development funding more feasible in the short term. There is merit in reviewing the DCC bylaw and funding priorities – perhaps placing the Willis Road connector east of Petersen on a lower priority for funding, and treating the extreme flow diversion pipe, Nunns Creek sedimentation / habitat solutions, and ERT conversion/trailhead completion as a higher priority – perhaps with jointly financed initial

construction and a latecomer or DCC payback arrangement as development proceeds, and/or funding through a stormwater utility.

- ✓ These concepts require an assessment of technical feasibility, cost, financing and legal mechanisms that are beyond this plan. At the same time, the land use and transportation policies in this plan will allow a more precise update of the Nunns Creek ISMP and related engineering.

5.0 PHASING AND IMPLEMENTATION STRATEGIES

Proposed strategies to encourage implementation that have been mentioned or embedded in this plan include:

Summary of Implementation Strategies:

- ✓ Arrange land use and density designations to encourage a 'transfer of development potential' away from the ERT corridor and up to the terraces and the proposed village core.
- ✓ Allow a use of a part of the north section of the ERT for a combination of neighbourhood collector road and walk/bike connection. This would connect to the proposed Ridge Road, and by a Main Street to new Petersen Road. Together this provides a second collector to supplement Petersen Road to 14th.
- ✓ Consider changing the Willis Road extension west of Petersen to a longer term priority. Consider co-operative funding of an extreme event stormwater diversion pipe, or alternative community stormwater solutions, and the public section of ERT road as a priority, with payback as development proceeds.
- ✓ Modify land use and transportation designations to create commercial /transit hub at the centre of 450m walking distances – including a village core area.
- ✓ Add provisions in key areas for work/live, loft, or flex buildings that can morph from residential to increasingly commercial uses as population and demand grows in the plan area.
- ✓ Work with the School District on a parks & school site acquisition strategy. This might include a purchase, subdivide, rezone and sell-back approach on key properties.
- ✓ Require priority planning for walk/bike connections – prior to or concurrent with development concept design (subdivision PLA or development permit).
- ✓ Implement and monitor targets for Greenhouse Gas reductions, through use of the land use and transportation principles in this plan. Consider implementation of Development Permits for Water Conservation and/or

Energy Conservation to encourage best management practices in private land sites and buildings.

- ✓ In principle, if the City is investing in infrastructure which would reduce development costs in the study area, preference should be given to infrastructure that supports the more dense and mixed use village areas of the plan, rather than single family areas. This investment approach will increase the likelihood of the mixed use portions being implemented, as opposed to the entire study area becoming single family subdivisions.
- ✓ Investigate whether expedited infrastructure investment by the Province of BC might provide funding to support key infrastructure – in particular stormwater, 'Ridge' road and walk/cycle trails – in the short term.

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Appendix B

Preliminary Financial Analysis

**G. P. Rollo & Associates Ltd.
Land Economists**

April 17, 2008

To: David Reid, Brett Korteling

From: Paul Rollo, Gerry Mulholland

Re: Quinsam Heights/Nunns Creek Smart Growth Study

As you are aware we have now travelled to Campbell River to acquaint ourselves with the Quinsam Heights and Nunns Creek area, its role in the future growth of Campbell River and its potential to attract new and higher density residential plus commercial development.

As discussed with you, the time horizon for this study and the application of Smart Growth principles to future development must involve a long term perspective, as much as 20 to 30 years. This long term perspective will be driven primarily by limited population growth, the need for commercial development to service a small neighborhood population and the changing affordability for housing which will, over the next 1-2 decades result in the Campbell River housing market requiring much higher densities of development (duplex, townhouse and apartment) than are required today.

This is an introductory memorandum, the first of 3 +/- memorandums we envisage producing for the Study:

- 1) This Memorandum #1 will present our initial views as to Study Area growth potential.
- 2) Memorandum #2 will allow us to assist Lanarc in choosing a preferred land use Scenario. Study Area stakeholders have expressed their interest in Scenario C. We believe that a modified Scenario C should be pursued and our Memorandum #2 would be focused on assisting Lanarc consider the merits of a modified Scenario C.
- 3) Memorandum #3 will be focused on the economics of residential and commercial development for the modified Scenario C.

1.0 Factors Shaping Development Potential in Study Area

As a starting point, we would like to describe factors which will be interacting to shape the demand for housing and commercial space in the Study Area.

- 1) Campbell River's Economy is still largely resource based.
 - a) The nature of the economy is unlikely to change significantly for 1 to 2 decades and therefore development will continue to be focused on single family, with a slow shift toward multiple family over this time.

- b) There are different expectations for Campbell River population growth that have differing consequences for the demand for housing. Currently population growth is less than 1% per annum. Local commentators view the high end of population growth resulting in an increase in Campbell River population of 20,000 to 30,000. We do not believe this is likely to occur over the next 20 +/- years. In our opinion population growth over the next 20 +/- years will be lower at between 12,000 and 15,000. This will translate into an average annual demand for housing of roughly 225 units per year in the Study Area.
- 2) While the demand for housing in Campbell River is principally for single family housing with 75% of starts in 2007 being for single family and an additional 18% being semi-detached, over the next 20 years there will be a significant shift towards multiple family housing, i.e. duplex, townhouse and apartment.
 - a) While the recent split between single versus multiple family is 70% and 30% respectively with the majority of the multiple family being semi-detached houses, over the next two decades this will shift to 40% multiple family (and possibly an even higher percentage) and 60% multiple family housing.
 - b) This shift towards more multiple family housing will be driven by housing affordability issues which will center on the rapidly rising cost of housing in Campbell River. Single family housing will become increasingly unaffordable.
- 3) The focus of development for the next 3 – 5 years will remain centered on the southern end of Campbell River.
 - a) After that, there will remain only infill potential in all other areas, apart from Quinsam Heights/Nunns Creek.
 - b) Infill will likely present a preferable option for many developers due to significant additional costs that will be associated with the Study Area.
- 4) Development potential in the Study Area is adversely impacted by development servicing costs for storm, sewer and roads, and the additional DCC for Nunns Creek. As such, developers will prefer to seek opportunities elsewhere in Campbell River that present lower development costs until such time as the market strengthens to the point that development will be viable (it will take several years for this to occur).

- 5) For the next decade demand for multiple family housing in the Study Area will be more townhouse rather than apartment, demand for which would emerge in 10+ years as the population grows and the area becomes more vibrant. There is unlikely to be any significant potential for higher density and concrete over the next decade, and that which does occur will most likely be located in the downtown or on prime waterfront sites.
- 6) Redevelopment in the downtown will likely create a critical mass that will enhance development opportunities in surrounding areas, particularly those closest to downtown, such as envisaged by concept C. The opportunities for multiple family housing in Scenarios A and B are more restricted than for Scenario C, particularly with regards to higher density (3 or 4+ storey projects).

In summary, at the current time the demand for multiple family housing is quite small – single family housing is still affordable for many Campbell River households. However, housing affordability will become more and more of a problem beyond the next decade, necessitating a shift towards more multiple family housing. One only has to look at the experiences of other larger Island or other mainland BC municipalities that have been experiencing housing affordability problems to see the rapid provincial shift towards multiple family housing. By necessity, Campbell River will follow suit over the next 5 to 15+ years.

- 7) Factors shaping commercial development in the Study Area include:
 - a) Proximity to the Island Highway creates an opportunity to develop highway oriented regional and community commercial space as described in Scenario A.
 - b) Proximity to the downtown with its large existing and proposed commercial developments and significant new commercial development in the south will result in commercial development in the Study Area being focused on serving only the Quinsam Heights and Nunns Creek area itself, apart from that which is located along the Island Highway. There will be little inflow demand for commercial development. At this time of the Study process, we recommend applying an average 8-10 sq.ft. per capita to provide an order of magnitude estimate of what the demand for convenience retail and service space would be. For example, the following describes commercial space requirements for a range of population growth:
 - i) For population increase of 5,000, commercial space needs would be 40,000 to 50,000 sq. ft.

- ii) For a population increase of 10,000, commercial space would be 80,000 to 100,000 sq. ft.

We will work with Lanarc to determine the capacity for future population growth in the Study Area and in a future memorandum will address the issue of population growth and commercial space requirements.

- c) Our expectations for the Study Area's main commercial village are that it could:
 - i) Reach a maximum of 100,000 sq. ft. of space.
 - ii) Service the Study Area and not greater Campbell River.
 - iii) Provide almost exclusively personal and business retail and services rather than provide regional destination shopping which will be centered in the downtown and emerging nearby large commercial/regional centres.
 - iv) Create opportunities for mixed residential and commercial development, i.e. apartment over retail.
 - v) Create excellent opportunities for Smart Growth principles to be successfully applied to a major mixed use development.

2.0 Timing of Development

We offer the following comments on the likely timing of development of the Study Area.

- 1) For the first 10 years:
 - a) The focus will be more on single family housing. But during this period, especially in the latter 5 years, the introduction of higher density development along the lines of increasing duplex, patio homes, and townhouses.
 - b) There will be limited development opportunities for low rise apartments and definitely no high rise at this time – the market simply cannot support the required prices to make development of this nature viable.
 - c) New commercial development will be very limited, except perhaps for Scenario A which has potential to attract highway commercial serving the region rather than the Study Area. Commercial growth within the Study Area will likely be on the order of 10,000 to 20,000 sq. ft. (depends on population capacity and growth which will be discussed with Lanarc) in 2-3 small commercial projects.

- 2) For the second 10 years:
 - a) While multiple family development will continue to be dominated by townhomes, low rises apartment development will become more evident as higher density development will be required to address Campbell River's housing affordability problems.
 - b) Commercial development within the Study Area will likely be more favourable during this period, with development as outlined in Options B and C becoming viable. The commercial potential for highway commercial as in Option A will continue to grow during the second 10 years.
- 3) For the third 10 years:
 - a) Assuming population growth in Campbell River is close to projections, the majority of that growth will likely be shared by the downtown and by Quinsam/Nunns.
 - b) There will be demand for a greater variety of housing options and prices to accommodate this growth.
 - c) Multiple family development will continue to grow with a continuing shift to 3-4 storey apartment projects. Apartments in both wood frame and concrete should be economically viable and have a market to support them by this period.
 - d) Commercial development will be fully realized in the early part of this period, with strong potential for a Community Commercial development at the major intersection within the area, whatever that may turn out to be. There would also be potential to include some apartments and/or mixed use development in proximity to the major commercial development.

3.0 Comments on Scenario A

We offer the following initial thoughts regarding Scenario A.

- 1) Scenario A has the potential to attract regional oriented highway commercial space on the Island Highway. This option has regional commercial/industrial/service commercial development opportunities whereas others do not. The potential commercial build out is larger than B or C, say 250,000 to 400,000 square feet, depending on the use.
- 2) However, this will create more of a conflict with surrounding multiple family residential uses than would exist in Scenarios B and C where much more of a neighborhood village environment will be realized.

April 17, 2008

David Reid, Brett Korteling

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- 3) The area you are contemplating for commercial and higher density residential development has larger lots and therefore is easily assembled and redeveloped for commercial and/or multiple family housing.
- 4) The proposed commercial and higher density residential area will allow for single family and medium density development along the slopes to the east of Peterson Road, which likely represents where the market will seek to go in the first 10 years.
- 5) There are some smaller lot single family homes in the area to the south of the higher density and commercial node that will present a barrier to redevelopment for multiple family, and to higher intensity industrial uses.
- 6) Overall, Scenario A presents very few options for densification and for implementation of Smart Growth principles. For the most part development would be principally to maintain the status quo of single family homes, with a smattering of duplex, townhouse, and patio homes in the Study Area.
- 7) There are few opportunities to create mixed use areas given the concerns outlined above regarding the proximity to the highway and the types of likely commercial development to occur in the Scenario, and the lower density indicated throughout the rest of the Study Area.
- 8) Scenario A represents the least change from existing uses in the Study Area and would result in the perpetuation of an automobile centered, suburban environment, with little to no opportunities to work, live, and play within a neighbourhood.

For the above reasons, we do not believe that Scenario A represents the best Scenario for the Study Area.

4.0 Comments on Scenario B

We offer the following initial thoughts regarding Scenario B.

- 1) This Scenario allows the creation of a much more attractive urban village environment. We expect that the village commercial would offer on the order of 100,000 sq. ft. of space at build-out (must be verified by discussing population and housing capacities in the Study Area).
- 2) This Scenario has much greater opportunity to successfully apply Smart Growth principles to the development of commercial and residential uses centered on the commercial/residential village.

- 3) There appears to be ample opportunities for medium density development throughout the northern part of the Study Area, which would work well with the proximity to the downtown.
- 4) There is less conflict between regional industrial/commercial and higher density development than in Scenario A. The location of the primary commercial node and the nature of the logical commercial development in Scenario B will present few barriers to higher density residential development in proximity to a commercial centre.
- 5) As with Scenario A, this option allows for medium to low density development to occur immediately in attractive areas to the east along Peterson Road.
- 6) Smaller single family development to the south of Willis Road will inhibit opportunities to build commercial or multiple family on the south side of Willis during the period of time that this study will cover.
- 7) The location of the primary commercial node off Peterson Road is not the best for visibility and access. The commercial opportunities in Campbell River and in the Study Area will be fragile for some time and therefore will take 15+ years to get enough population to support commercial off of Peterson Road. If the commercial area were centered on the intersection of Willis and Peterson there would be opportunity for faster and more diversified commercial development.
- 8) There will likely be issues with more intensive development along the creek, but with larger parcels on the east side of Peterson there will be opportunity to incorporate the creek into a comprehensive/mixed use development.
- 9) The Nature-Oriented Cluster Development along the eastern edge of the Study Area presents some interesting development opportunities that will allow for some densification while maintaining ecologically sensitive areas.
- 10) There would be nothing to preclude the inclusion of some highway commercial development along the lines proposed in Scenario A, as this would be more regional in nature.
- 11) Scenario B presents a significant change from existing land use patterns and could have significant potential for creating a village/neighbourhood that embraces the Smart Growth principles.

For the above reasons we can see some potential for Scenario B for the Study Area. However, there are some modifications required in terms of placement of the central node in order to offer it the greatest chance of success.

5.0 Comments on Scenario C

We offer the following comments regarding Scenario C.

- 1) Scenario C focuses density on the slopes on the east side of Peterson Road, with some additional density clustered around two commercial nodes.
- 2) As the only density that will be economically viable in the short term is townhouse, there are concerns about the situation of future developments and the ability to incorporate future higher density development in the indicated area.
- 3) Additionally, there could be issues with pricing and affordability of the townhouse form on what might command some of the premium land values in the Study Area due to the water views. Larger estate lots are more likely going to be able to support the premiums that view lots will command.
- 4) Apartment development is unlikely to be economically viable for several years in the area indicated for higher density, creating an issue with regard to preservation of land to be available for higher density uses in 20 years time.
- 5) Lot sizes can provide some controls on future land use, but there will be additional issues that will make any density greater than townhouse difficult along the eastern side of Peterson Road, including existing and future development at lower densities, as well as NIMBYism.
- 6) The area identified for higher density will have the highest servicing costs of the 3 Scenarios as a new north/south road through these large lots will be an absolute must before higher density development will become possible. All 3 will have the same roadway, but the earlier construction of the roadway that will be required in Scenario C will place a greater financial burden on developers compared to A and B. The issue here is that the market will not likely support the higher selling prices that will be required to make development viable with the north/south roadway for a number of years.
- 7) Having two commercial centres will likely hamper the viability of both. As well, the east/west alignment of the northern commercial node doesn't make sense; commercial should be focused along Peterson Road, not perpendicular to it. The southern commercial node overlaps significantly with the small commercial development at Evergreen Road, which will affect viability.

- 8) The preference would be to have a small commercial node to the north to service the nearby residents in the higher density area, and then to concentrate the larger commercial development to the south along Peterson closer to Willis.
- 9) The location of the higher density in proximity to downtown does not create a true 'connection' due to the topography and natural area. It does, however, allow for a significant amount of residential close to the central business district.
- 10) The Nature-Oriented Cluster Development to the east of the high density area would present some unique opportunities as with Scenario B.
- 11) Scenario C presents what would likely be the greatest departure from existing land use of the three. What it does not do, however, is create a village/neighbourhood feel as currently laid out.
- 12) There are some opportunities to incorporate Smart Growth principles with Scenario C, but much of the commercial nodes within walking distance overlap too much, leaving other areas without nearby commercial development.

In summary, we see that Scenario C has many qualities that would be attractive to Study stakeholders. However, we believe that the Scenario can be improved upon as suggested in our comments regarding our "preferred/modified" Scenario.

6.0 Our Preferred/Modified Development Scenario

Having reviewed the three Scenarios you have proposed for the Study Area, we believe that the best Scenario may be an alternate fourth Scenario with the following characteristics.

- 1) There is probably need for a modified/new commercial concept that recognizes opportunities for more commercial locations, with highway commercial similar to Scenario A, and community focus to the east along Peterson, plus 2-3 corner convenience uses. The key to remember is that smaller, concentrated amounts of commercial to the east that serves the residents will be more viable than if it is spread out.
- 2) We also have to recognize that commercial to serve the residents of the Study Area will evolve SLOWLY and critical mass will take 10-15 years to be established.
- 3) Highway Commercial development is not dependant upon increased residential population for success as it will draw on regional

population. As such, there will be potential for development at any time along the Highway.

- 4) Will the area "explode" with new single family development in 3–5 years after the area to south is done? Probably not, as land values have already started to rise in the area, combined with higher DCCs and higher servicing costs than in the southern area of Campbell River. This will allow us to focus on duplex and townhouse to along the west side of Peterson while single family is attracted to the view properties on the east side of Peterson.
- 5) Sloped and view properties are the most likely to evolve into one of Campbell River's higher end neighborhoods – that's economic reality. This will force standard and affordable single family to the south and then one should focus on duplex, townhouse and apartment around and perhaps to the north of Willis and Peterson.
- 6) Commercial development would be best focused along Peterson as well to offer the best chance of success, with the future main commercial area to be located at or close to the principal intersection for the area, whether it be Willis and Peterson, or some other alignment.
- 7) This would allow for mixed use and higher density development to be focused in closer to the commercial area, with lowering densities as you move further out.

We trust that these introductory comments will assist Lanarc in its planning for the Study Area. We look forward to discussing these initial thoughts with you and continuing on to discuss our recommendations for a modified Scenario C plus providing financial insights into development opportunities.

Yours truly,

G. P. ROLLO & ASSOCIATES LTD.

A handwritten signature in dark ink, reading "G. Paul Rollo". The signature is written in a cursive, flowing style. Below the signature, there is a horizontal line that is slightly longer than the signature itself, serving as a baseline or underline.

G. Paul Rollo

GPR/ms

Appendix C

Input Received

CITY OF CAMPBELL RIVER
MEETING NOTES FROM
Quinsam Heights / Nunns Creek Smart Growth Implementation Plan
Public Open House #1

HELD ON WEDNESDAY, FEBRUARY 20, 2008 AT 7:00 PM
In the Ecole mer et montagne, 1681 Evergreen Rd., City of Campbell River

Present:	Paul Stanton	City of Campbell River
	John MacKay	City of Campbell River
	Les Ready	Committee member from Community Advisor Commission
	Ralph Walker	Committee member from Development Advisory Commission
	David Reid	Lanarc Consultants
	Brett Korteling	Lanarc Consultants
	22 Members of the public	

1. Welcome & Introductions

Mr. Stanton began the meeting with a welcome, an explanation of the history and purpose of the study.

David Reid reviewed the agenda – attached as an Appendix.

2. Purpose & Mandate of the Implementation Plan

The facilitator (David Reid) introduced the purpose and mandate of the Implementation Plan. A timeline was presented including two more public meetings: one for an evaluation of alternatives and another for draft recommendations.

3. Principles of Smart Growth

A presentation by David Reid introduced the study area, known characteristics and the principles of Smart Growth.

4. Facilitated Discussion

The facilitator, (David Reid), led a discussion period with the group concerning issues and opportunities in the study area. Key highlights included:

- **The concept of a village centre.**
Would it compromise a larger central location with more than just convenience amenities or would commercial development result in two or more separate convenience store amenities? Discussion addressed how to promote desired commercial development and

the general pattern that commercial development follows residential. Attention was placed on the City's need to allocate and preserve appropriate locations for future commercial development. It can be difficult to arrange the proper commercial development context with many different landowners.

- **Connectivity for pedestrians and other transportation modes.**

Three major connection gaps were pointed out:

1. At the northwest corner of the site, plans were proposed for a walkway over the highway to connect this development with its northwesterly phase. The plan is still in place and was established through a development works agreement. Funding is achieved as each residence is sold. Time will make the funds available.
2. It was noted that the golf course separates the northwest portion of the study area and there was some discussion about a possible Right-of-Way to the west of the golf course closer to the highway.
3. There is a lack of East/West connectivity between the upper study area and the lower neighbourhoods east of the study area. There was mention of an historic logging road that could be used from the west to travel to the ERT. The Hydro ROW is also used as a pathway. There exist other plausible pathways/grades in the areas with steeper slopes due to other historic logging roads.

- **Roadway connectivity for car travel to other parts of Campbell River.**

- ❑ Northward: Various plans for the Peterson Rd. upgrade and realignment were referred to and the current preferred alternative is some form of a connection with Maple Rd. This route would facilitate easy access to planned commercial development in the northeast part of lower Campbell River. It was noted that the Spruce street connection has drainage issues.
- ❑ Eastward: The Willis Rd Bridge is still on the books for council to discuss. Progress is held up with land acquisition. Other options for eastward connection are via Evergreen Rd, Pinecrest Rd and Merecoft Rd.

- **Roadway connectivity for development of the large east/west oriented lots west of the ERT.**

The topic of opening up the ERT for car access to these lots was raised as opposed to a new road construction that connects Cheviot and Willis and crosses near the center of these lots. Discussion ensued regarding the reality that all development will need road access, but the only future roads needed in this area are local roads as Peterson and Willis will act as the arterial connectors. The point was made to ensure that development in this area maintained the natural character of the ridge west of the ERT.

- **Development potential and development patterns.**

A question was raised on the development potential in this area. Estimates reveal a possible maximum of 20,000 more people, but if existing development patterns continue a more realistic estimate would be 10,000 to 15,000 people. In 1998, there was the idea that OCP and Zoning density in the area was too high, but local landowners were not in favour of downzoning. Basic services of water and sewer are available to this area and the Council of Campbell River intends for this area and southern Campbell River to be the major future growth areas.

- **Stormwater management.**

Many areas of poor drainage and ponding were mentioned. It is clear that future development will need to innovatively address stormwater management. Specific sensitive stormwater locations mentioned were: near the intersection of Tree Lane Rd. and Westmore Rd., past the downslope section of Spruce St, in private lots on the lowlands in the north east section of the study area and an all year flow of water was noted near the intersection of Peterson Rd and Cheviot Rd.

4. Map mark-up

Open house attendees were encouraged to write comments on the maps to point out missing or important information.

Map mark-ups included:

- Identification of Institutional properties
- Lack of walkway connectivity between old Peterson Rd and Campbell River to the east
- Steep sections of Peterson Rd.
- A trail in the open space beside Kingfisher creek
- Stormwater overflow locations and one place with an aesthetically displeasing aroma.
- Possible wetland location
- Poor intersection location/design
- How to address corner configuration at Peterson Rd. and Croatian Rd.

5. Written Responses Received

Participants were provided a response form that encouraged written submissions on issues and opportunities for the study area. Responses received attached as an Appendix.

Quinsam Heights / Nunns Creek Smart Growth Implementation Plan

RESPONSE AND COMMENTS FORM

20 responses received

1. Land Use and Density

The Quinsam Heights / Nunns Creek infill area will receive a good portion of Campbell River's future population over the next 20 years. Three options for residential density and land use mix are presented. Which option do you prefer? Things to think about: which option provides ready access to schools, services and green space to all residents of the neighborhood? Which one preserves important environmental systems and maintains the natural character of the area? *For each residential and land use mix option, please indicate your level of support and the features that you find most important from a community and personal point of view:*

	Support		Neutral		Don't Support	Reasons – what do you like or don't like about this option?
Option	1	2	3	4	5	
L1 Highway Focus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
L2 Central Focus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
L3 Slopes Focus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> put development high where the view is this is the closest to current development

	Support		Neutral		Don't Support	No Answer	
L1 Highway Focus	15%	15%	15%	5%	20%	30%	100%
L2 Central Focus	10%	20%	25%	10%	20%	15%	100%
L3 Slopes Focus	20%	10%	20%	5%	20%	25%	100%

▪ Not enough info to make a decision

2. Major Road Network

Roadway connections from the Quinsam/Nunns area to the rest of Campbell River can be provided by a variety of approaches. In all cases, predicted traffic loads are not heavy. In general, there are choices that involve either spreading out the traffic to many alternative routes, or concentrating traffic on a few major roads. *Please let us know what you think about the proposals being presented:*

	Support		Neutral		Don't Support	Reasons – comments
Option	1	2	3	4	5	
R1 Dispersed System	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> need to move traffic onto Evergreen
R2 Concentrated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> second ave should be joined to Willis Rd. not in agreement to 2nd

System						<ul style="list-style-type: none"> ▪ don't like Willis Connector ▪ what happened to Willis connector? Should be a priority. ▪ Bus service would be inadequate for seniors
R3 Parallel System	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ don't want ERT turned into a road. It's a great bike trail and has a poor connection at bottom

	Support		Neutral		Don't Support	No Answer	
R1 Dispersed System	30%	5%	10%	10%	10%	35%	100%
R2 Concentrated System	15%	20%	5%	5%	30%	25%	100%
R3 Parallel System	20%	15%	20%	5%	20%	20%	100%

- Are there other options? Need maps to look at impact especially on water systems and green spaces.

3. Subdivision Pattern

As land is subdivided, many decisions are made about road and lot pattern to balance objectives of owner privacy vs. walking / friendly communities. Some patterns force more use of motor vehicles. Some patterns form exclusive enclaves that have been referred to as 'ghettos for the rich'. It is likely that all of the choices below will be found in the neighbourhood. *But which pattern do you think should dominate in the Quinsam/Nunns area?*

Options	Support		Neutral		Don't Support	Reasons – comments
	1	2	3	4	5	
S1 Cul de sac pattern	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ with trails connecting schools and parks (2) ▪ with connecting green paths/walking paths (3) ▪ need to have access to properties for walking ▪ Should be easy to av paths and walkways through cul de sacs
S2 Grid pattern	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
S3 Exclusive parcels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ with green connectors ▪ limit number

	Support		Neutral		Don't Support	No Answer	
S1 Cul de sac Pattern	20%	5%	25%	0%	35%	15%	100%
S2 Grid pattern	30%	25%	10%	0%	10%	25%	100%
S3 Exclusive parcels	5%	5%	35%	5%	30%	20%	100%

4. Parks, Greenways and Green Infrastructure

The proposed park and greenspace network is aimed at preserving identified ESAs (environmentally sensitive areas), particularly the important aquatic and riparian habitat along Nunns Creek and its tributaries as well as headwater areas for Haig-Brown Kingfisher and Simms Creeks. Some significant forested areas also exist, which provide many important ecological services such as carbon absorption and oxygen release, air filtration, shade and cooling, wind shelter, and stormwater abatement. Based on a 2005 air photo, forest stands covered about 35% of the Quinsam Heights / Nunns Creek area. *Please indicate your support for the following proposed strategies regarding "green infrastructure".*

Options	Support		Neutral		Don't Support	Reasons – comments
	1	2	3	4	5	
Minimum 30-m wide buffer along Nunns Creek and major tributaries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ Already conditional ▪ 15m on each side ▪ And Simms creek ▪ Support as long as the distance is not over 30m
Restrict trail development within 30-m buffer along Nunns Ck and tributaries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ Already conditional ▪ And Simms creek
Retain average 35% tree cover throughout area using a mix of parks, tree retention and street/lot replanting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ Need this increased to ensure hydrologic cycle continues ▪ emphasis re: planting as many of the present trees are unhealthy
Support use of new Engineering Standards 2007 to require better water quality and stormwater control on site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ Keep these systems public

	Support		Neutral		Don't Support	No Answer	
Min 30m Creek Buffer	75%	0%	5%	0%	0%	20%	100%
Restrict Trails in Creek Buffer	55%	0%	10%	5%	10%	20%	100%
Retain 35% of Tree Cover	80%	0%	0%	0%	5%	15%	100%
Support Engineering Standards 2007	75%	5%	0%	0%	0%	20%	100%

5. Reducing Greenhouse Gas (GHG) Emissions

The City of Campbell River has signed onto a "Climate Change Charter" with the Province and over 100 other local governments in BC to take action to reduce GHG emissions, including become carbon neutral within the City's operations by 2012. Reducing GHG's means reducing the use of fossil fuels. Building more compact, complete communities is one way of achieving this. Other ways are to reduce the need to use vehicles (number of trips and distances traveled) and to increase energy efficiency in homes. *Please indicate whether you think the following*

strategies should be included in the Quinsam Heights/Nunns Creek Smart Growth Plan to contribute to GHG reduction.

	Support		Neutral		Don't Support	Better ideas, refinements, comments
	1	2	3	4	5	
Increase transit service along Peterson Rd &/or elsewhere in the area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ Night service increase with population increase ▪ with night service (2)
Build bike lanes along major roads (Peterson, Willis, Evergreen, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ My grandchildren used to walk to Evergreen, but cannot to Ripple Rock
Maintain ERT as a walk/cycle trail as part of city-wide Recreational Greenways Loop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ it's the logical path for bikes and the grade is gentle ▪ from N. Old Peterson orth would be road//shared and south would be walk/cycle
Build other bike/walk routes to key destinations (high schools, commercial areas, the ERT).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Promote multifamily housing forms and use of the 'Green Building Code' [*]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ Must include low cost affordable housing. Service jobs are increasing but places for people to live on these lower incomes aren't ▪ A mix of highrise, townhouse and single family houses works well – I have lived in one

* The Province is 'greening' the provincial Building Code to incorporate new objectives and standards for energy and water efficiency in single family, multi-family, commercial and industrial building construction – see <http://www.housing.gov.bc.ca/building/green/>.

	Support		Neutral		Don't Support	No Answer	
Increase transit service	45%	10%	20%	0%	0%	25%	100%
Build bike lanes on major roads	75%	5%	0%	0%	0%	20%	100%
Maintain ERT as pathway	65%	5%	5%	0%	0%	25%	100%
Build bike/walk routes to key destinations	75%	5%	0%	0%	0%	20%	100%
Promote multifamily housing and "Green" building	60%	10%	5%	0%	0%	25%	100%

6. Final Comments

Any other thoughts or comments about the options, planning proposals or the future of the Quinsam Heights/Nunns Creek neighborhood area in general?

- Need green connectors to different areas.
- High density needs to be on the slopes. This is where developers want to be because of the view.
- ERT need to remain closed and used for walking, biking, etc. Not a good intersection at the bottom anyway.
- Need a better road than Peterson. It's very dangerous. The hill is not suitable for walking. Could be upgraded.
- Need lots of green space — treed space as well as grass.
- Bike paths on the roads need to be paved right by the traffic. The current practice of setting them 10' off the roads doesn't suit commuters (dangerous at intersections).
- Commercial area at Peterson and Willis OK but not for a "convenience" store. Milk & newspaper does not support viable business. Doctor/dental/barber, etc. should be focus.
- Willis to 2nd is too disruptive & too expensive — also 2nd is too busy an area.
- Area should include a large sports field complex with soccer & baseball pitches so we don't have to drive to Willow point sportsplex.
- Willis Road should be connected to 2nd Ave. for better hospital to Hwy access.
- Trails should be connected to ERT from Carihi.
- Essential to protect the waterways setbacks from riparian areas should be maintained at 30m.
- Need to maximize the access points to Beaver Lodge lands.
- When schools are not convenient for walking to — i.e. Ripple Rock — provide bus service (use electric vehicles) to avoid 50 vehicles driving to school twice a day! (In CR most of the vehicles are 4WD pick-up trucks!)
- All new roadways must include dedicated bikeways/sidewalk!
- Lot A, Part of block 24, which have single ¼ acre lots to be in zoning.
- It would be prudent to provide maps and walk us through item by item to get a valued response.
- Poor process
- Need more information.
- Should have better advertised meetings.
- Process flawed and poorly run.
- Longer meetings and spread process out.
- This is important and needs to be done properly.
- Lot A plus part of block 24 that is Nature oriented cluster housing should be used for single house dwellings as well.
- Instead of the north/south collector Rd. we think it would be much more economical to redo the ERT Rd. for the same purpose.
- I'm somewhat disappointed with this process although the presenter was very professional & well spoken the format and discussion was flawed. Without maps on each table (for reference), it was impossible to remember then decide how I felt about each one of the questions. There should have been more notice & advertising to get more people involved.
- Partially open the ERT!
- Preserve/maintain Nunns creek watershed.
- Keep ERT as part of greenways.

- Maps on the tables would have been very helpful.
- Willis Rd. should be kept to low density traffic until built up to access requirements; sidewalk, trail, anything.
- Were not given maps at our table.
- We came to this meeting. We understood this meeting was going to concern our area only.
- Not enough information – maps, etc.
- Comment on traffic loads – “minor changes” – not well thought out. This area (school area) traffic has much increased.
- There were no maps for individuals to peruse. This is new information & we would like to take something with us to study and to share with neighbours.
- Need to go slow with this process because so much of what we took for granted is changing. For example – water systems/weather is very unpredictable.
- This does not represent all the possible options.
- Green connectors.
- Reduce traffic use.
- Connectors to ERT with development to walk and bike.
- Infiltrate water on site.
- Reuse greywater in development.
- Need some LEED development.
- Need some density in downtown area.

Points of consensus and areas of issues from the discussion that ensued after the small working group session.

Consensus	Is Issues
<ul style="list-style-type: none"> ▪ support for parks ▪ support for GHG measures ▪ lot A block 24 include SF housing in addition to low density strata ▪ lack of green connectors in plans would change plan 	<ul style="list-style-type: none"> ▪ land use / density ▪ location of focus ▪ location of trails ▪ need time for in depth discussion ▪ maps on tables ▪ mark forms as presented ▪ takeaway info ▪ area to replace sawmill/horse/rural zone ▪ role of land conservancy
<ul style="list-style-type: none"> ▪ slopes focus close to commercial/downtown & views 	<ul style="list-style-type: none"> ▪ highway focus
<ul style="list-style-type: none"> ▪ parallel road system 	<ul style="list-style-type: none"> ▪ concentrated access to highschool and Dogwood

<ul style="list-style-type: none"> ▪ cul-de-sac with green connections ▪ 35% forest cover ▪ keep ERT ▪ cornerstone viability ▪ incorporate trails into subdivision plan 	<ul style="list-style-type: none"> ▪ rail corridor from city ▪ low cost housing suites ▪ better utility vault systems
Advertise in the Reel!	

Information to help us:

To give us some idea about the coverage of this comment form, please let us know where you live:

- ☐ Quinsam Heights/ Nunns Creek Neighborhood area - which street/road? _____
- ☐ Within City of Campbell River, outside Quinsam Heights / Nunns Creek area
- ☐ Outside Campbell River

Thank you for your time and thoughtfulness.

Kindly hand in your individual response form at the workshop, or return it **by April 3, 2008** to:

Paul Stanton, Planning Services Manager

Planning Dept., City of Campbell River

301 Ann's Road, Campbell River, BC V9W 4C7

Tel: 250-286-5730

fax: 250-286-5761

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Quinsam Heights / Nunns Creek Smart Growth Implementation Plan

RESPONSE AND COMMENTS FORM RESULTS – 6 RESPONSE FORMS RECEIVED

TRANSPORTATION and LAND USE

1. What mixed land use 'Village' should be supported in recommendations to Council?

	Don't Support	Support as proposed	Support with refinements	No Answer	Better Ideas, Refinements or Comments
Provide focal point mixed use 'Village' in vicinity of Peterson and Shetland Roads.	0%	50%	33%	17%	Shetland Road will be difficult to get to full width. Since many residents will have mobility problems, sidewalks must have low grade and frequent rest spots. Have commercials on Petersen. Central area is good. Petersen is major Arterial good. Could be moved East away from Arterial.
Use 'Amenity Zoning' to encourage a 'transfer of development potential' away from the ERT Valley and to the area near Old Peterson Road.	33%	50%	0%	17%	Does not fit present market topographic constraints. Developer's with large lots will want to maximize R.O.I. and use as much land as possible. Market conditions dominate.
Include a +/- two-block zone of retail or work/live with residential above or mixed use in to the Village core.	0%	83%	0%	17%	Commercial viability will be low with proximity and access to downtown.
Allow apartment-style buildings close to the Village centre (3-6 stories) if conditions are met.					Should go through on ridge top only.
Put "high" rises near Petersen Road so views of residents further east are not as impeded.	0%	50%	33%	17%	
Conditions for higher density might include under-building parking, additional green space, and/or early completion of commercial space.	0%	83%	0%	17%	Limit car ownership to one per dwelling. Green space is good.
Pursue land for both a neighbourhood park / school site, within easy walking distance of the Village centre.	33%	50%	17%	0%	I think the existing property used for the old evergreen school should be the site used for a newly constructed school. It's in a perfect location to service all the new homes being build in that area. Only if required by school board. With current trend another school is not likely to be necessary anytime soon.
Write new zoning language to guide provision of street-oriented mixed use retail or work/live with residential above in two areas near Willis / Island Highway	0%	50%	33%	17%	Focus should be on Evergreen. Allow service commercial near highway, not retail. One site has recently abandoned plans for commercial because of environment concerns (Red legged frogs) these sites may be more challenging than thought of at present.

Comments

With respect to District Lots 1405 and 1407 the more level land is close to old Peterson lending itself to single family development while the eagle tree recently found uses up a great deal of the developers density allowing higher density by the E.R.T will allow that density to made up while still allowing amenity space around a building set into the bank. The developments could be done with green principles in mind while allowing a greater number of citizens to enjoy the E.R.T pathway.

Please provide MAILED notices of meetings – newspaper ads are ineffective! If you can mail out tax notices, you should be able to mail out notices to targeted residences.

The only market for retail near Willis Road & the highway will be “big box” not “live/work” Service commercial would be more useable?, “big box” retail would be inappropriate, and “live/work” would be more appropriate to a central area.

The proposed transportation network is contrary to the recommendations of the CCR master plan’s needs to be substantiated. Creation of a neighbourhood with bike/walking to downtown is also good. ERT usage at north end will be important. Maintaining 5% grades will not be practical or cost effective to build.

Residential Areas Outside the ‘Village’

	Don't Support	Support as proposed	Support with refinements	No Answer	Better Ideas, Refinements or Comments
For the Willis / Fisher area:					
Maintain medium density land use designations.	0%	67%	0%	33%	Don't know enough
Pursue a neighbourhood park / wetland / medium density development central to the area	17%	50%	0%	33%	
At lands south of Merecroft:					
Keep estate land use designations but allow clustering to avoid environmentally sensitive areas “estate use”.	17%	67%	0%	17%	Do not know significance of term
Maintain low to medium density land use designations:					
for the Homewood area..	17%	50%	17%	17%	Seems suited for med-high. Should be
high Density. Developer's need flexibility to sell within given market climate.					
for the other study area periphery.	0%	67%	0%	33%	Unknown where this is.

Other Local Commercial / Mixed Use areas

	Don't Support	Support as proposed	Support with refinements	No Answer	Better Ideas , Refinements or Comments
Encourage a walk-to Mixed Use / Local Retail area at Croatian and Peterson	0%	83%	0%	17%	
Encourage ‘corner store’ operations, concurrent with residential development, at two locations along a completed Pinecrest extension	17%	50%	17%	17%	How “completed”?

Comments

The lands south of merecroft should be allowed to be developed as estates as there has traditionally been a shortage of small acreages in Campbell River. This could be reduced by connecting Evergreen to the highway 19 to provide alternate access to downtown. This would be less costly to all Campbell River citizens than proposed Willis / 2nd Avenue connection and far more useable to general public.

2. What walk/cycle/transit transportation choices do you support?

	Don't Support	Support as proposed	Support with refinements	No Answer	Better Ideas , Refinements or Comments
Maintain the core of the ERT as a dedicated part of a City-wide Recreational Greenways Loop	33%	50%	17%	0%	High density alone side allowing green space landscaping. Shared use with vehicles at north end should be considered.
Open the ERT to local traffic only, mixed with cycle/walk provisions, between 14 th St and the BC Hydro Power line	0%	50%	50%	17%	I think opening the E.R.T Road to the power lines is a good idea, but instead of having junction with 14 th on the corner of 14 th (where it currently starts) I think it bshould join up with the bottom of Peterson Road. This should be accomplished by having it continue straight through the residential property driveway at the bottom of the hill (1175 Peterson) and blocking of Peterson road at Highland Road. This would Adders two problems, #1 the steep (Treacherous in winter) hill and having a traffic light right in the middle of a 90 degree turn (presuming there be a traffic light where the E.R.T crosses 14 th .) Open whole road, set up separate walking paths.
Close the ERT south of Evergreen once adjacent development has eliminated the need for vehicle access	33%	50%	0%	17%	
Provide ERT trailheads (parking gated at night, signage, washrooms, some access to adjacent land) near the entrances from roads at BC Hydro power line, Evergreen and Merecroft.	17%	83%	0%	0%	Until reopened.
Maintain fire and emergency vehicle access along the ERT, and connect via trails to adjacent subdivisions, to allow more flexible subdivision design	0%	83%	17%	0%	Reluctantly approve.
Provide multi-use trail connections from Village to Carihi.	0%	67%	17%	17%	Ensure adequate policing to avoid (Revert) miss use.
Village to Nunns Creek Park area	0%	67%	17%	17%	See earlier comment re: design of walkways for low mobility residents.
Provide a 'grid' walk/cycle system in the Village Centre	0%	67%	17%	17%	
Provide minor trails parallel to but generally outside of streamside leave areas	17%	50%	0%	33%	Should be as close as possible. Environment needs to be respected nothing with 30M (20M absolute minimum)
Require walk/cycle/trail/transit stop planning submissions as a precursor to subdivision consideration of road layout	17%	17%	33%	33%	Practical approach with developer consideration. Ban skateboard use! and provide suitable rest stops. Transit is the most convenient way to move people. Where appropriate, city needs to pre-determine road layout and transit stops. Existing development plans need to be considered and integrated. Must be done at same time.

	Don't Support	Support as proposed	Support with refinements	No Answer	Better Ideas , Refinements or Comments
Maximum grade of primary walk/cycle routes, whether along streets or independent, should not exceed 5% as a guideline	0%	33%	50%	17%	Par to topographic constraints this is not practical. It is possible to walk up steep pitches. Where feasible. Even as a guideline it puts too much cost onto the developer. Pedestrians and cyclist will have to cope with steep slopes. Works in Richmond, not here. Doesn't fit topography of area.
Provide improved bus stop facilities with better sidewalk access, site furniture and shelter.			17%	67%	0% 17%

Comments

As the Demographics of the City change with our aging population easy access to level pathways like the E.R.T. are a great idea. Higher density close to these more pathways would allow easier access for the elderly who would occupy the apartment style buildings that should be close the E.R.T. Bikeways are a great idea but people would still need vehicles for longer trips and emergencies. We cannot ignore safe vehicle access.

Ripple Rock Elementary siting is an unmitigated disaster; for most of the year 40-50 vehicles (pick-ups & SUV's mostly) arrive twice a day because walking/biking access is poor & dangerous with no sidewalks on Petersen & other feeder roads. Provide safe access for "village" residents to RR School.

Petersen should be connected (realigned) to 14th at ERT/Maple. Alternate route to Homewood thru trailer park good for access to lower E.R.T. area.

3. What road pattern is appropriate for the area?

	Don't Support	Support as proposed	Support with refinements	No Answer	Better Ideas , Refinements or Comments
Provided the 'grid pattern' of walk/cycle is in place, allow a mix of Cul-de-sac and grid street patterns for local roads to suit topography and urban design walkways.	0%	50%	33%	17%	Ensure that cul-de-sacs are connected by
Arterial Roads shall be Willis Road and Peterson Road	17%	33%	50%	0%	I think Willis should be connected to 2 nd
Avenue and should be a priority. I don't think Peterson Road should be a main arterial as it has too many points of entry from bdriveways of roads. (Approximately 80 from 14 th Avenue to Willis Road.) Not Willis Evergreen. Both need serious upgrading Willis/Petersen intersections. Sight lines are very bad!!! No roundabouts – 4 lane ASAP. Extend Willis to 2 nd .					
Collector Roads shall follow a 'redundant grid' pattern, so that traffic is dispersed rather than concentrated	17%	66%	0%	17%	
The connection from the Village to 14 th using part of the ERT shall be a local road, not a collector	33%	33%	17%	17%	Not a collector for what traffic?? It should
be the main or at least important access point to the village. Should be minimum collector with signals at Homewood/Maple and divert traffic away from the Petersen road hill.					
As a guideline, driveway access from the ERT will be discouraged, in favor of separate lane or local road access.	17%	83%	0%	0%	Only required if topography dictates.
Extension of Willis Road between Peterson and 2 nd will be treated as a future priority, with land assembly proceeding but construction of road delayed until demand justifies. Trail/bikeway access may proceed in the interim.	49%	17%	17%	17%	Should be a priority. Not sensible / too
costly. Should be built ASAP. Related storm drain catchment areas should be a priority. Current Priority.					
Small-scale roundabouts should be considered for new collector road intersections.	49%	17%	17%	17%	Good idea with high traffic volumes a
waste in rural neighborhood. Make them, large enough to be safe, how ever! Worst idea I've seen, see section 7. Roundabouts are not pedestrian or bicycle friendly.					

4. Do you support the proposed environmental greenway system?

	Don't Support	Support as proposed	Support with refinements	No Answer	Better Ideas , Refinements or Comments
Riparian (streamside) areas along Nunns, Simms and Haig-Brown Kingfisher Creek.	0%	50%	17%	33%	Already there. Better East West access.
Steep slopes > 30%. and slope stabilization. Keep off?	17%	33%	17%	33%	Development with engineered retaining
Key site for stormwater ponds, and valley lands in the central ERT area	0%	67%	0%	33%	

5. Where and what other environmental improvements should be pursued?

	Don't Support	Support as proposed	Support with refinements	No Answer	Better Ideas , Refinements or Comments
Restore a creek channel at the headwaters of Nunns Creek in the vicinity of Peterson and Merecroft (aligned around a City property in the area that may be Public Works Yard and/or future Recreation Park	17%	33%	17%	33%	Not needed.
Provide requirements for street tree planting and a minimum 35% standard for tree cover planting after development	33%	33%	17%	17%	Average over tree. Maintenance cost is too high. Street tree program has not achieved desired results and has been an administrative nightmare. Seems a bit high.

6. What improvements might make the neighbourhood more GHG efficient & sustainable?

	Don't Support	Support as proposed	Support with refinements	No Answer	Better Ideas , Refinements or Comments
Promote multifamily housing forms Choose sites carefully.	0%	50%	33%	17%	Allow higher density near the E.R.T.
Use new powers encouraged by the Province:					
the 'Green Building Code'	17%	33%	33%	17%	City should have an Aesthetics panel & permits should require approval by the panel to avoid sterile house as exists on Hillchey.
Development permits for :					
greenhouse gas (GHG)reductions to be implemented.	33%	50%	0%	17%	Needs better clarification how there are
energy conservation	33%	50%	0%	17%	
water conservation	33%	50%	0%	17%	
Require use of the City's new Design Standards 2007, with particular reference to those practices that will work in areas with poor drainage, including:					
minimum topsoil depths / standards	0%	33%	17%	50%	Generally these standards have not reached. maturity. Some good ideas but much more work required. No Idea what this is, these are sensible ideas. Far more attention needs to be paid to the implementation requirements and means to properly administer.
maximum impervious area (roof/pkg)	0%	50%	17%	33%	
infiltration swales / rain gardens	0%	50%	17%	33%	
pervious paving for parking/driveways	0%	50%	17%	33%	

7. General comments regarding the Study Area and Plan Process:

Please share your comments.

Quinsam Heights will grow and thus the study is a great idea. Most developments is developer driven and thus any plan must give due consideration to the developers needs the plan cannot be so full of itself as to make it too expensive to attract entrepreneurs.

Whatever the reservation by the landowner at the end of Evergreen, this should be the road developed as an added connection to town. It does not rise impactimc Numms Creek, more than it already has been impacted, and provides excellent hospital police access. Building a Willis – 2nd Connector would be very costly to all citizens whereas Evergreen has better set back and no bridge requirement. If this goes against the O.C.P then the O.C.P. should change just as the direction and focus of Campbell River has changed. Dogwood and top of Ridge should be zoned for 10 story lime of site condo development.

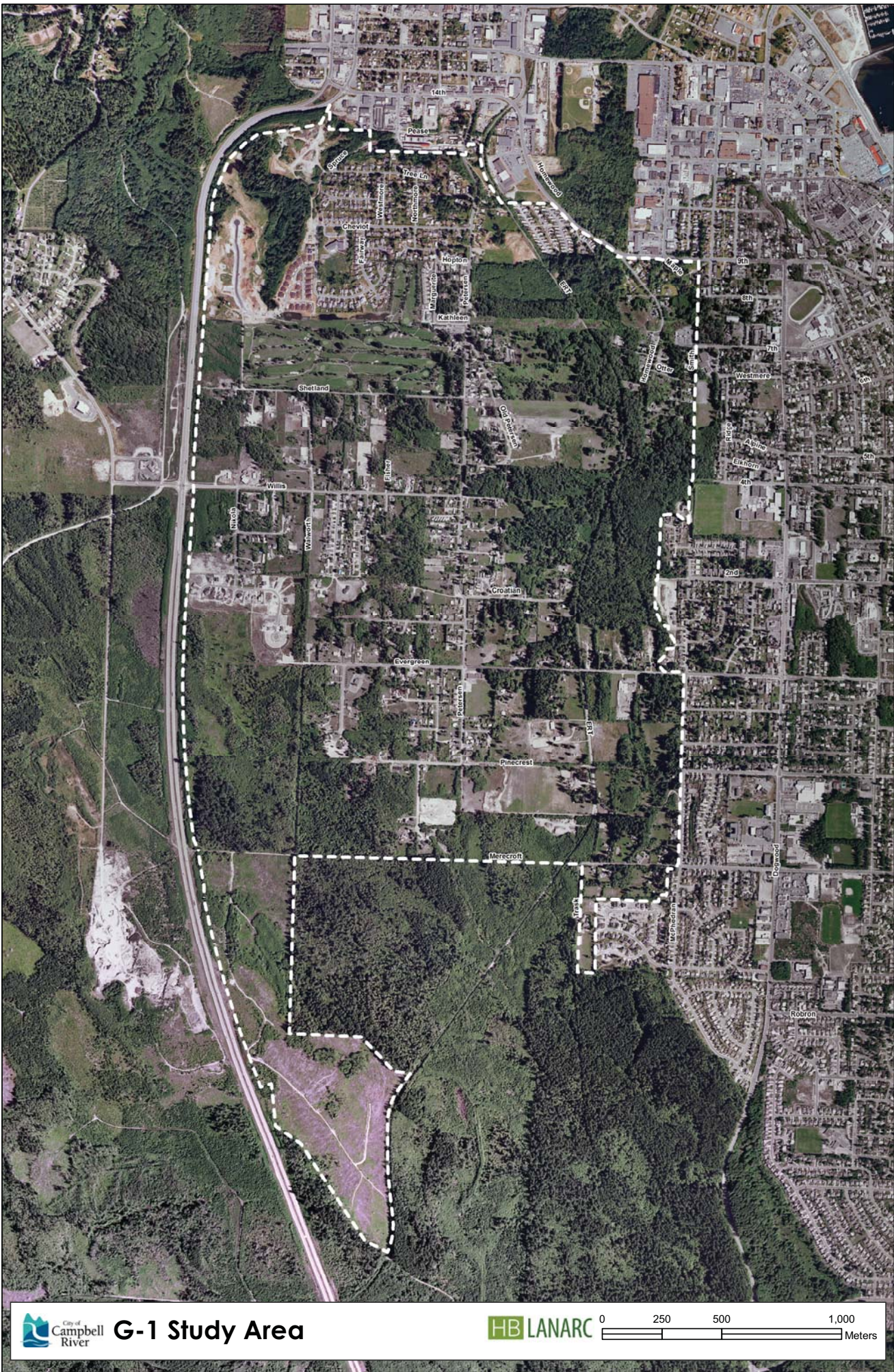
Please see comments previously noted, especially design for mobility problems. (I saw & approve notes about shelters etc.) Grid patterns of walkways and roads on sloping sites will invite skateboard & similar items unless designed to make this inconvenient for their users. Otherwise mayhem will ensue! I suggest that future (e-mails/mailings) (not advertisements) would include a map or picture like the one attached. Is there any way for the city to correct the maps of the city, which presumably originate with city developed maps? The one in the recent "76 things to do in Campbell River" even has non-existent roads on it. I was picked up by a "wheels for Wellness" driver yesterday, and he kept being led into dead-end streets by maps and his GPS display, eventually called for instructions! The maps the consultants has at the 2nd meeting, provided by the city, were also WRONG!

This City has only three North South main streets Petersen is essential to have any access. ERT should be re opened for its entire length and feeder streets hook to it. Roundabouts for main routes are insane. I do not use highway 7 now because of the roundabouts put in at the Bridal Falls end. You should encourage easy traffic flow in this area; not through it. We need a proper clover leaf at Willis. Willis should be a 4 lane street with sidewalks right through to 2nd Avenue. The hospital will remain and better access to it is essential to keep it isolated. Plays into the hands of VIHA - ? that is what you want. Most of the planning is shot already as main channel ? if they proceed, will make the north end ?. As stated earlier the first way to get a green concept in place is to have the ? and ? put cities. Many where their mouths are/ No other way will achieve the goal. Fix Petersen Road ASAP. On May 28 at 5:45pm a cyclist was hit by a car near 14th. this road is a disgrace. Put in a right turn lane at 14th Avenue ?.

8. Information to help us:

To give us some idea about the coverage of this comment form, please let us know where you live:

- 67% Quinsam Heights/ Nunns Creek Neighborhood area - which street/road?
- 33% Within City of Campbell River, outside Quinsam Heights / Nunns Creek area
- 0% Outside Campbell River



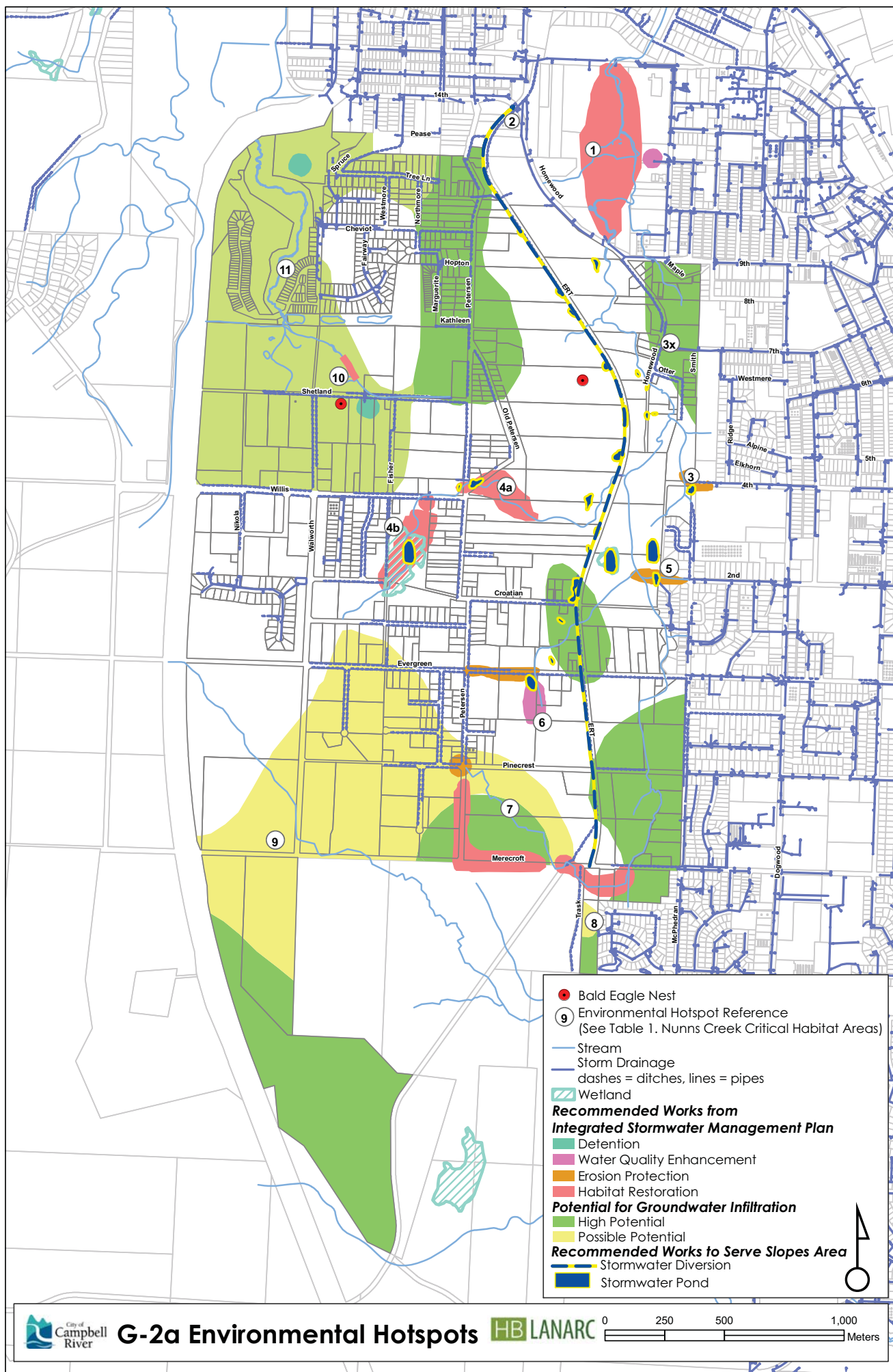







Table G1 NUNNS CREEK CRITICAL HABITAT AREAS Last revised 22-Apr-08


Map G2a - see map attached

“Impacts” and “Recommendations” from Nunns Creek ISMP, Urban Systems 2005 – Figure 8-2, pages 99 and 126 and Appendix A (Tera Planning report)


“Discussion Points 21 April 08” from meeting in CCR with: Terri Martin, Environmental Coordinator, Engineering Dept., CCR; Rick Senger, Habitat Biologist, DFO; Smokey Stephens, Development Services Coordinator, Engineering Dept., CCR

Map#	Location - features	Impacts/ Limitations	Recommendations	Discussion points 21 April 08	
1	Mainstem reach (Trib 1) below 9 th Ave - some gradient change between 9 th and 12 th , but generally flat and meandering - within tidal influence	<ul style="list-style-type: none">High sediment deposition impacting main channelIndustrial contamination from east tributary in Ironwood area.Lack of boulders and cobbles in instream habitatFlooding - 2 box culverts at 16th Ave backwater to top of culvert at high tide; silting from tidal reach and wetland may aggravate.	<ul style="list-style-type: none">Install sediment trap at 12th Ave with clean out and access in case of spill to address contamination.Consider boulder and gravel recruitmentInstream habitat could be enhanced by encouraging beaver activity with willow riparian planting.Maintain downed or unsafe trees as wildlife trees or drop for LODCulverts at 16th need repair or replace with arch culvert or bridge.	<ul style="list-style-type: none">Nunns has suffered high sedimentation rates for a long time. The lower end below Homewood/9th Avenue wasn't always a big wetland – evidenced by previous air photos and the presence of large conifers that are now dead snags. However, the combination of high sediment loads and backing up at the lower end culverts, particularly at 16th Avenue, has caused the lower end to fan out into shallow surface flows with no well-defined channel. Reed canary grass has flourished in shallow sediments, exacerbating poor drainage problems.Cannot consider adding to Nunns Creek flows until the downstream issues are addressed. Dredging sediment and replacing culverts in lower Nunns Creek would: increase drainage capacity; reduce flooding in 16th Ave area; and improve habitat.	 16 th Ave culvert
2	Ditch along ERT that drains into Maple St storm system north of study area.	<ul style="list-style-type: none">Ditch connections to Nunns Ck not clear, need to be determined.Remaining ditches from ERT to Maple St stormwater system flow into Campbell R - has Coho and other salmonid habitat that needs protection.	<ul style="list-style-type: none">Evaluate possibility of directing upper ERT ditches into Nunns system through ditch consolidation and channel reconstruction; vegetate ditches.	<ul style="list-style-type: none">Part of ERT ditch intercepts some of lower Nunns Creek drainage and diverts to Maple Street drainage/storm sewer and directly into Campbell River. However, the pipe at lower end is also at or near capacity (reference McElhanney report**).Both flow patterns (Nunns and Maple St.) need to be improved to support further development in Study Area. High costs involved. DCCs from upstream development can cover some of it, but City needs to take the lead in seeking funding or borrowing.	
3X	West end of 7 th Ave., Otter Rd			<ul style="list-style-type: none">Fish are swimming into ditch along Homewood at Otter Road during high water.Drainage from 7th Ave is overwhelming the ditch, flooding the property (being developed) on Homewood, and adding poor quality water to the mainstem.Need a detention pond/bioswale at end of 7th Ave to treat water and reduce flows to southward-flowing ditch; possibly divert some of 7th Ave flows to north flowing ditch on opposite side of Homewood.	
3	East Arm (Trib 2) at 4 th Ave	<ul style="list-style-type: none">Water pollution and sediment from “stormwater system”.Stormwater outfall from 4th Ave has oversteepened the existing ravine.	<ul style="list-style-type: none">Erosion control at 4th - check dams, rock liners in ditches to prevent erosion and bank cutting; outlet pond (tho may be limited room for treatment).Riparian planting at outlet for nutrients and shading.Source controls on lots, if feasibleLower reaches of East Arm – salmonid habitat could be enhanced with pool/riffle construction and LOD placement.	<ul style="list-style-type: none">Recognized problem – no specific discussion.	

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4	West Arm (Trib 3): 4a - ERT to Petersen 4b - upstream of Petersen, including wetland east of Fisher	<ul style="list-style-type: none"> Existing Willis Rd ditch impacts base and peak flows – low summer flows. High %fines and low %coarse substrate limits instream habitat Reduced riparian cover at headwaters. 5 potential fish barriers in lowest reach (1) – log weirs with insufficient flow to allow fry movement (USHP study, 1999). 	<ul style="list-style-type: none"> Sediment and flow control: Willis Rd re-development provides opportunity to: <ul style="list-style-type: none"> consolidate ditches to main channel rehab ditches to wider stream system – i.e., make ditches into swale {infiltration trench?} In-line detention – e.g., pond at outlet of Old Petersen Rd for treatment of Willis Rd drainage. Negotiate with owner of rock wall at Petersen/Old Petersen to replace with coarse rock liner. Gravel and cobble recruitment (replace fine seds). Direct drainage from south ditch into main trib rather than down Croatian. Vegetate ditches with grasses, wetland sp. Encourage landowners to plant riparian with native species, Source control (roof, driveway drainage on site) if feasible. Lower and enlarge culvert at Petersen (no - see Discussion). 	<p>4a:</p> <ul style="list-style-type: none"> High winter flows are causing significant bank erosion on property below Old Petersen. New culvert under Petersen to be installed this summer. RS/DFO believes that there is no good fish habitat above Petersen, and the fish should be discouraged from entering the upper reach (4b). However, the upper reach still needs to be managed for flow, quality and temperature. <p>4b:</p> <ul style="list-style-type: none"> Properties at lower end of Willis (near Petersen) are being flooded by increased flows resulting from increased development in headwaters. The plan for the Willis Road connector to 2nd Avenue included detention ponds o address upstream development impacts on flows in the Creek. Maybe some ability to improve drainage source control within Willis Road, but limited? - see general discussion (below) re. source controls. 	 <p>Upper Willis Rd ditches</p>  <p>Culvert under Petersen</p>
5	Mainstem (Trib 1) between 2 nd Ave and Evergreen Rd	<ul style="list-style-type: none"> Channelization due to stormwater outfall on 2nd Ave. Erosion of ditch along 2nd Ave ROW Poor stormwater quality 	<ul style="list-style-type: none"> Erosion control: rock liner and check dams along 2nd Ave ditch and at storm drain outlet. Water quality management: sediment trap and small detention pond on 2nd Ave ROW (already designed?). General cleanup of lower trib, introduce LOD. 	<ul style="list-style-type: none"> Part of the erosion issue is caused by the fact that 2 years ago, the contractor for the site to the south of the 2nd Ave drainage stripped the ravine banks of vegetation to use the 2nd Ave ROW as a haul road. The sediment pond presently at the bottom of 2nd Ave is supposed to be temporary to address the site development, but is still there and has not been properly maintained. 	 <p>2nd Ave road end, sediment pond</p>
6	Southwest Arm (Trib 4) upstream of Evergreen.	<ul style="list-style-type: none"> Significant water discoloration due to fill leachate and iron bacteria. South ditch along Evergreen between Petersen and outfall is steep (4% gradient), deep, and has steep banks –bank toe erosion and slumping. 	<ul style="list-style-type: none"> Water quality treatment: upper reach to headwall should have series of ponds with rock weirs to treat and detain water before entering culvert at Evergreen. Bank stabilization and control of toe erosion on south ditch along Evergreen Rd. Replant 15 m top of bank area with native species to introduce nutrients to lower reach. Source controls (roof, driveway drainage) if feasible. 	<ul style="list-style-type: none"> Recognized problem. 	 <p>Evergreen Rd ditch erosion in front of Ecole de la Montagne</p>

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7	Headwaters of main stem: - fed by series of ditches from rural areas	<ul style="list-style-type: none"> Lack of base flow Poor water quality Erosion of poorly defined channels at Trask {outside study area?} Lack of riparian vegetation. 	<ul style="list-style-type: none"> Review ditch system at Pinecrest and Petersen; consider swales and check dams; revegetate throughout for erosion control. Divert uppermost reach along Petersen ROW and Merecroft ROW; install in-line pond/ wetland complex in wet area at Trask and Merecroft for detention and treatment – objective: to achieve habitat balance under sec.3.2, Fisheries Act. Rebuild wetland outlet, culvert at Trask to redefine channel; replant. Source controls if feasible. 	<ul style="list-style-type: none"> The ‘stream’ from Pinecrest to Merecroft doesn’t really exist. Most of the drainage has been diverted eastward in a ditch along the Pinecrest ROW (the “Pinecrest trench”) directly into Nunns Creek. (Nonetheless, there is still some ‘stream’ drainage above Merecroft and Trask – see picture). DFO would be receptive to diverting and creating a distinct channel within or parallel to the Petersen and Merecroft ROWs (as recommended in the ISMP). 	 <p>Nunns mainstem above Trask</p>

General Comments from 21 April 2008 meeting:

Stormwater source control (LID measures)	<ul style="list-style-type: none"> Source controls will not handle all development that will occur in headwaters, around Willis Road; plus soils do not support extensive source control measures. Will still need detention and pipes. However, downstream systems need to be upgraded first (see site 1 discussion). SS: Despite new LID engineering standards, the City has no bylaw that allows it to apply/enforce those standards on individual lots. The City is developing a “drainage and grading” bylaw for this purpose – Lanarc study? Until that bylaw is in place, it is difficult to get source control measures in place (e.g., infiltration galleries, bioswales, increased topsoil depth) in headwater areas. 	
Habitat enhancement	<ul style="list-style-type: none"> (DFO) Besides addressing the sedimentation, the main habitat need in the Nunns system is off-channel rearing habitat. When flows are high, salmon seek quiet off-channel refuges – will use ditches when ponds and side-channels are not available. E.g.: RS/DFO recently approved closure of a ditch off 16th and Petersen in exchange (compensation) for creation of off-channel ponds as part of development between 2nd Ave and Croatian Rd. 26 LWD complexes proposed in 2002 in study by Komori Wong Environmental (March 2002); 16 at end of Homewood near Otter; none have been built to knowledge of DFO, CCR. 	
Trails along streams	<ul style="list-style-type: none"> In keeping with the RAR, don’t indicate trails next to/running along streams. Trails “in vicinity” of streams, with occasional overlooks and crossings, are ok – but try to keep majority of trails {at least 10-15 m?} from top of bank. 	<p>Trail damage to streambank (2nd Ave)</p> 
Wetland protection	<ul style="list-style-type: none"> Lack of tools or ability to protect pocket wetlands. Planning Dept. indicates that these would be addressed at “the site level”, but these wetlands tend to be plowed under as part of pre-development clearing and grading. Suggested that City-led inventory would at least warn developers in advance; better yet, inventory and designate as DPAs. 	
RAR implementation	<ul style="list-style-type: none"> Most developers commission Detailed Assessment – the extra ~\$1000 in consulting fees is usually worth the extra development allowed by reduced SPEA. 	

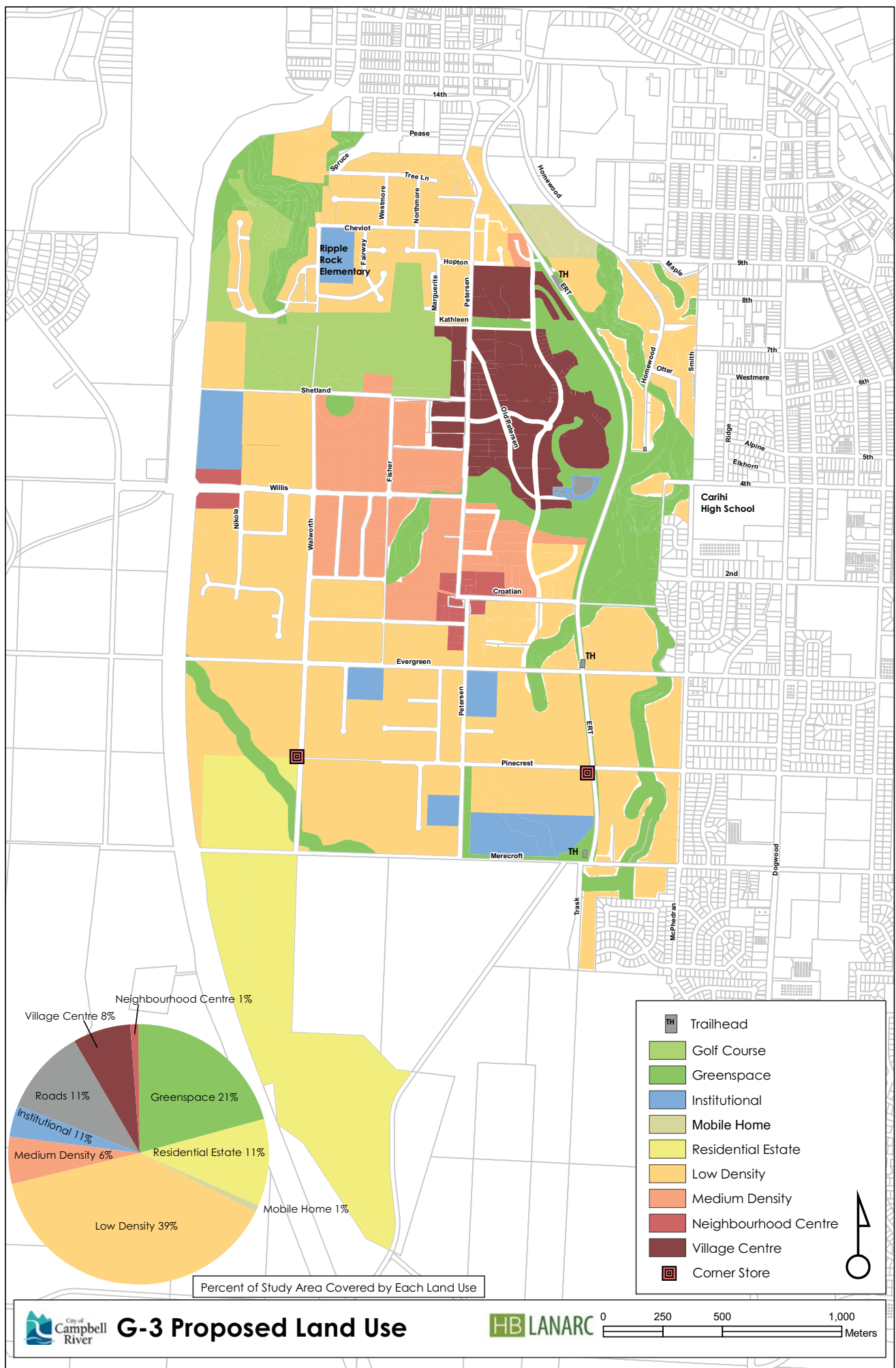
SIMMS CREEK CRITICAL HABITAT AREAS
from Simms Creek ISMP, Urban Systems 2005 – Appendix A (Tera Planning report)
Just portions of watershed that lie within or adjacent to study area are addressed.

	Location - features	Impacts/ Limitations	Recommendations	Discussion Points 21 April 2008	
8	(ISMP's critical area 3) Small trib to north branch of Simms Ck at McPhedran Rd., wetland complex at junction with McPhedran.	<ul style="list-style-type: none">• Cortez-McPhedran storm system drains to trib, contributing poor water quality and sediment to wetland.• Headwaters impacted by erosion, obstructions and altered streams.• High temperatures in trib.	<ul style="list-style-type: none">• Maintain existing wetland-pond complex.• Clean out pond at outfall, use flowering bulrush as donor stock for other sites.• Remaining wetland can be charged by stormwater through LOD weirs, will treat and detain.• Existing subdivision at McPhedran should be drained to wetland, not pond.• Pond and outlet for new subdivision at McPhedran should be planted.• Enhance riparian planting in denuded areas.• Infiltration at source (roof, driveways, swales on lots) if feasible.	Not discussed.	
9	(ISMP's critical area 4) Headwaters of north Simms at Inland Island Hwy 19 – impacted by highway construction and presence	<ul style="list-style-type: none">• Reduction in base flows• channelization leading to erosion• Sediment accumulation along 2 culverts• Isolation of some wetlands.	<ul style="list-style-type: none">• Identify wetland areas on each side of highway; install small weirs in strtegic lowland areas to restore wetter status.• Check culverts for inlet and outlet pools; should be able to backwater into culvert to create splash pools.• Install check dams in highway ditches, direct flows to wetlands, ponds or depressions where possible to enhance detention and filtration.• Vegetate denuded ditch banks with native plants.	<ul style="list-style-type: none">• When the Inland Island Hwy was constructed, water from the west side of the highway was diverted into a pipe to the east side, basically creating this drainage into the upper end of Simms. Either MOT or the property owner excavated a channel to deal with the drainage.	

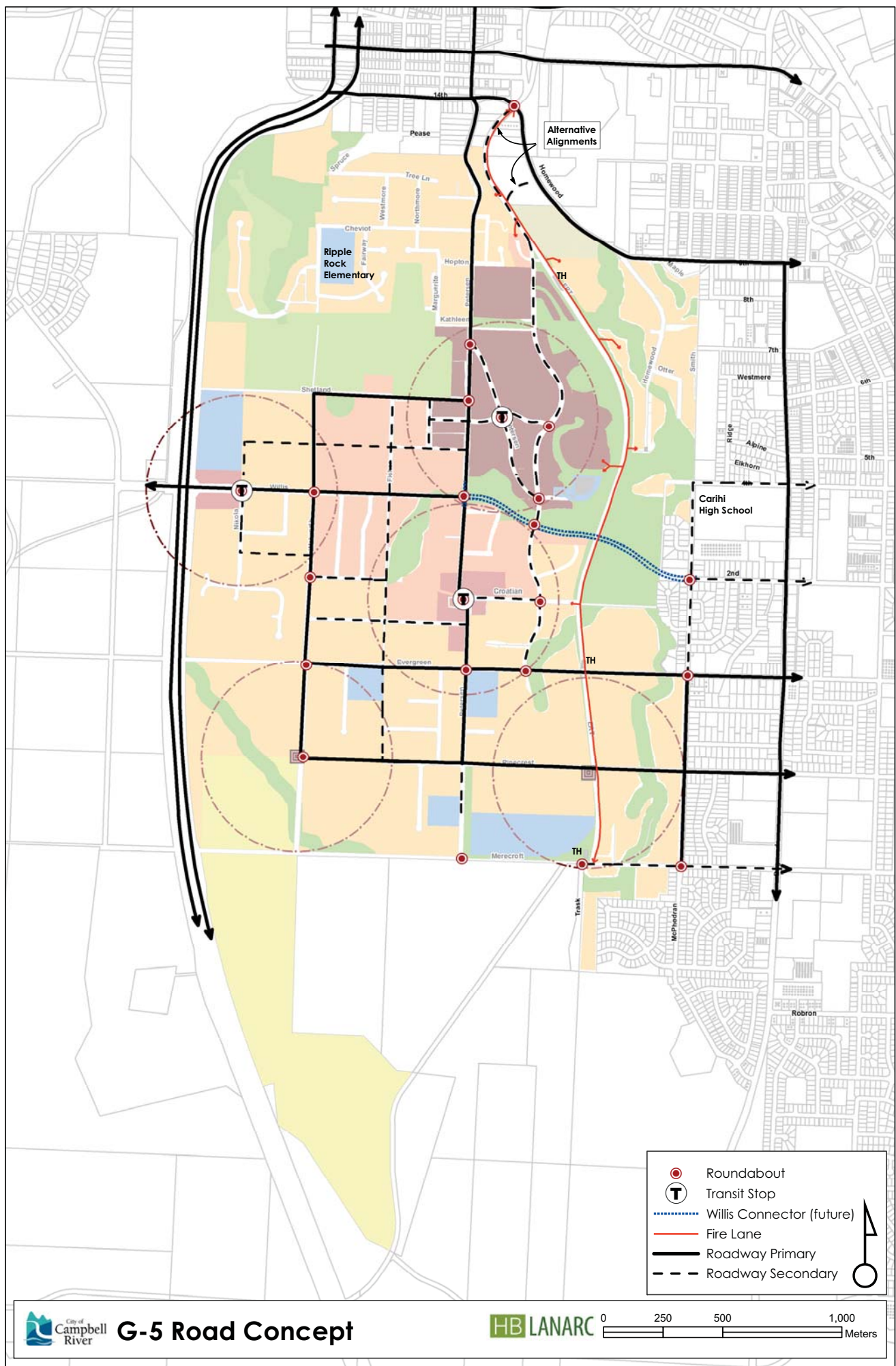
HAIG BROWN'S KINGFISHER CREEK HABITAT IMPROVEMENTS
from Quinsam River/Campbell River ISMP, Urban Systems 2006 – Figures 3.5 and 9.1
Just portions of watershed that lie within or adjacent to study area are addressed – not discussed at 21 April 2008 meeting.

	Location - features
10	(From Figure 9.1) Recommended detention ponds – size and location approximate
11	(From Figure 3.5) Potential riparian restoration opportunity at Sequoia Springs golf course – 0.158 m stretch. 3. Increase riparian cover through the Sequoia Spring golf course by planting Native shrubs where possible to increase instream and riparian complexity. Determine acceptable species with the golf course owner.

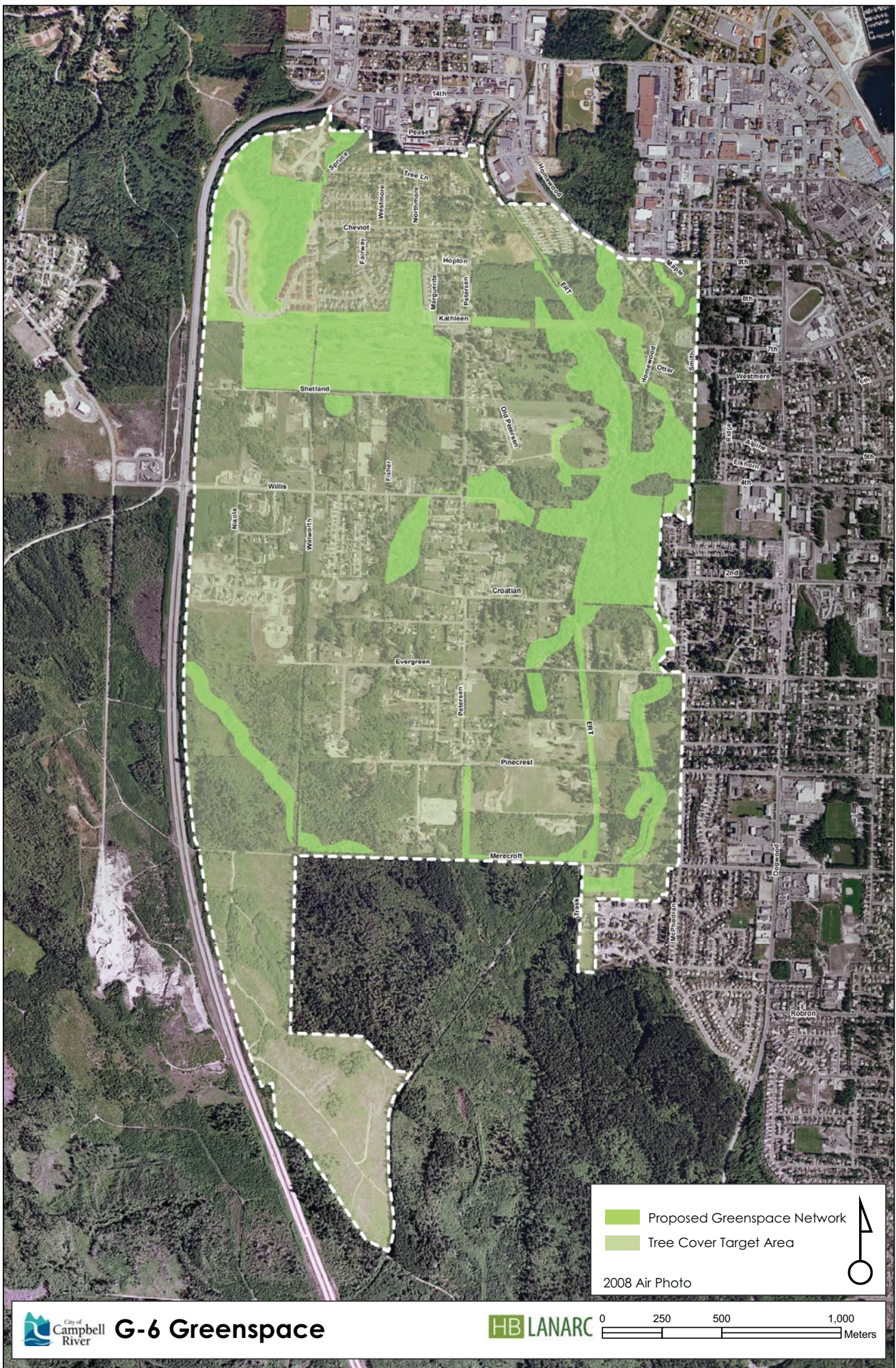


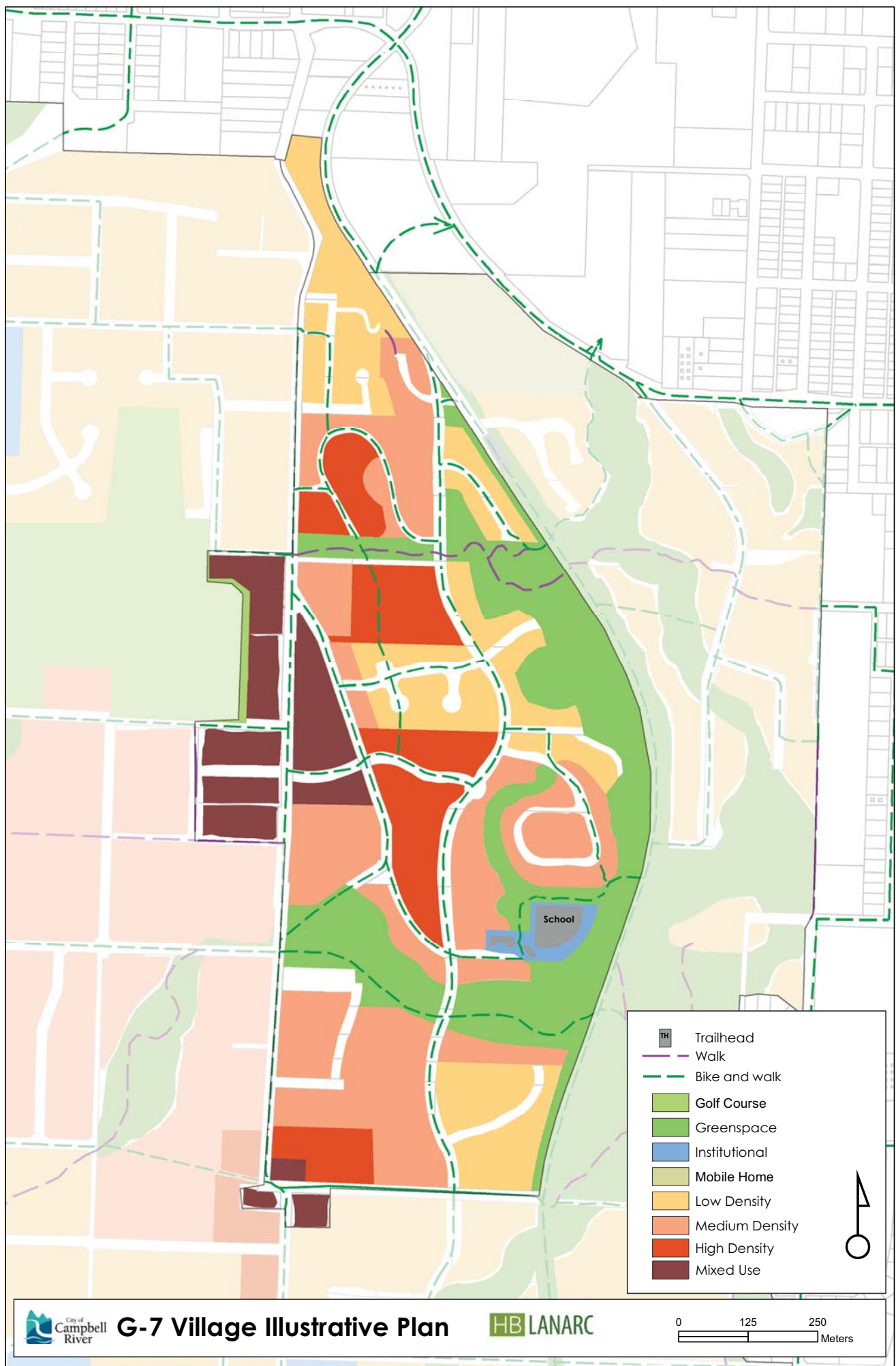


Note: Land Use boundaries and street/path alignments are conceptual and subject to refinement.

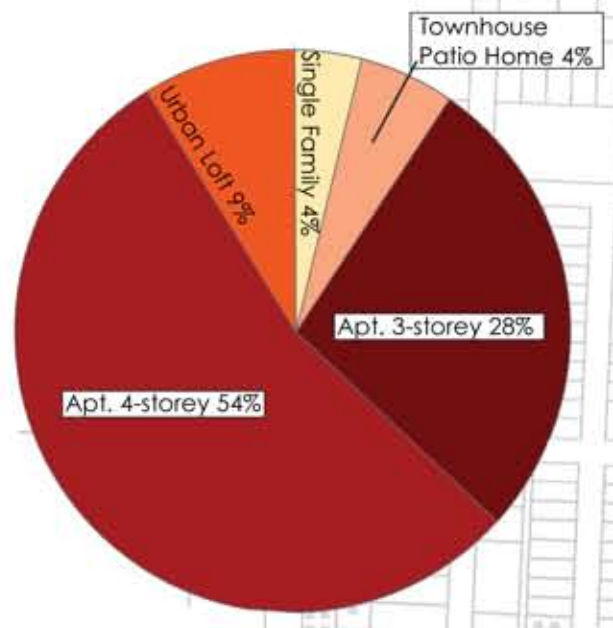


Note: Alignments are conceptual and may vary. Not all roads are shown.

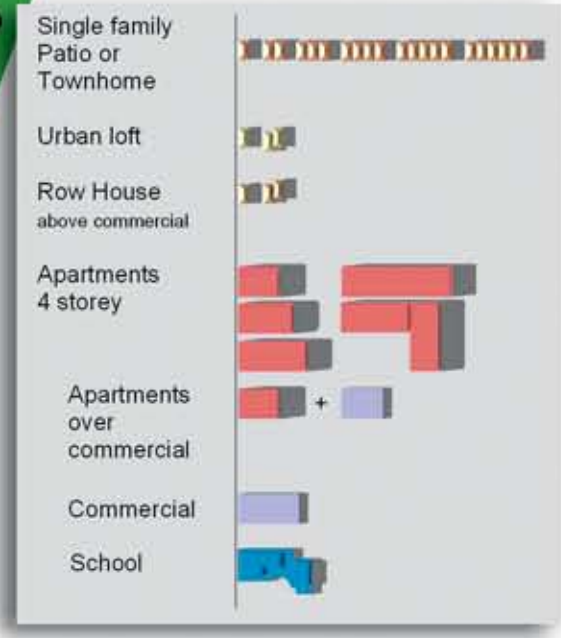
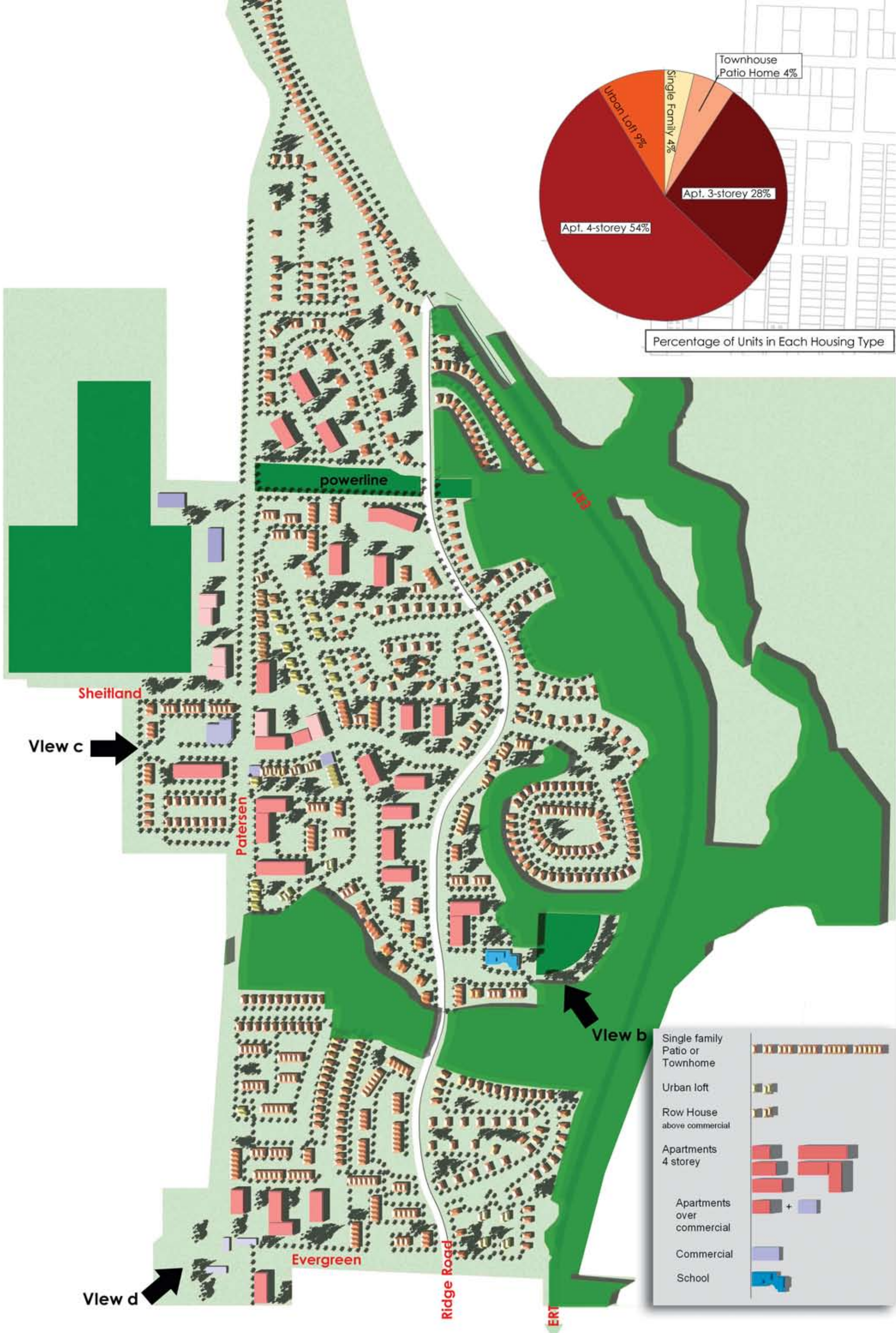




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Percentage of Units in Each Housing Type





View (b) perspective 250 metres above ground



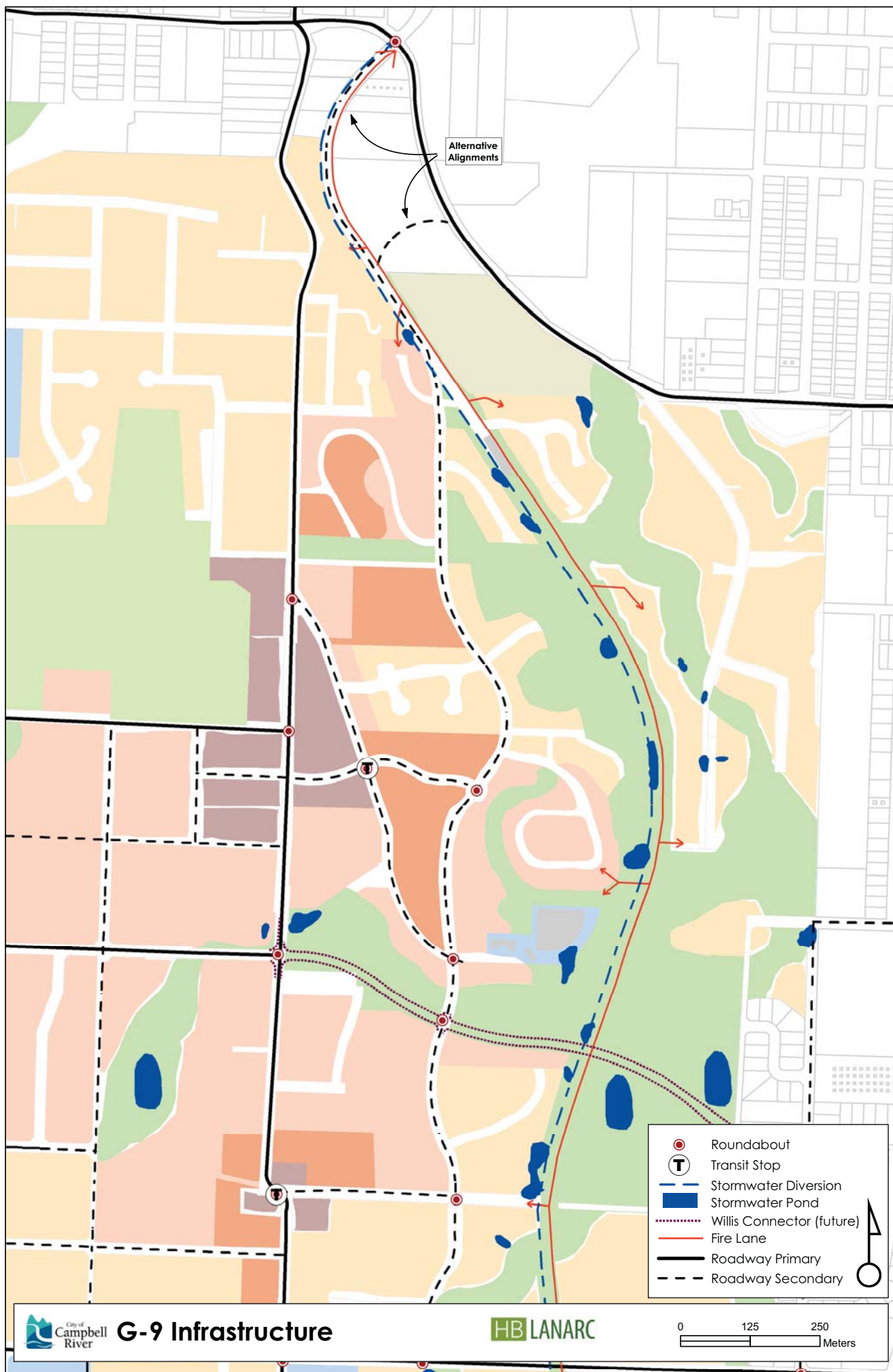
View (c) Perspective 300 metres above ground



Close up perspective



View (d) perspective 300 metres above ground

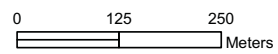


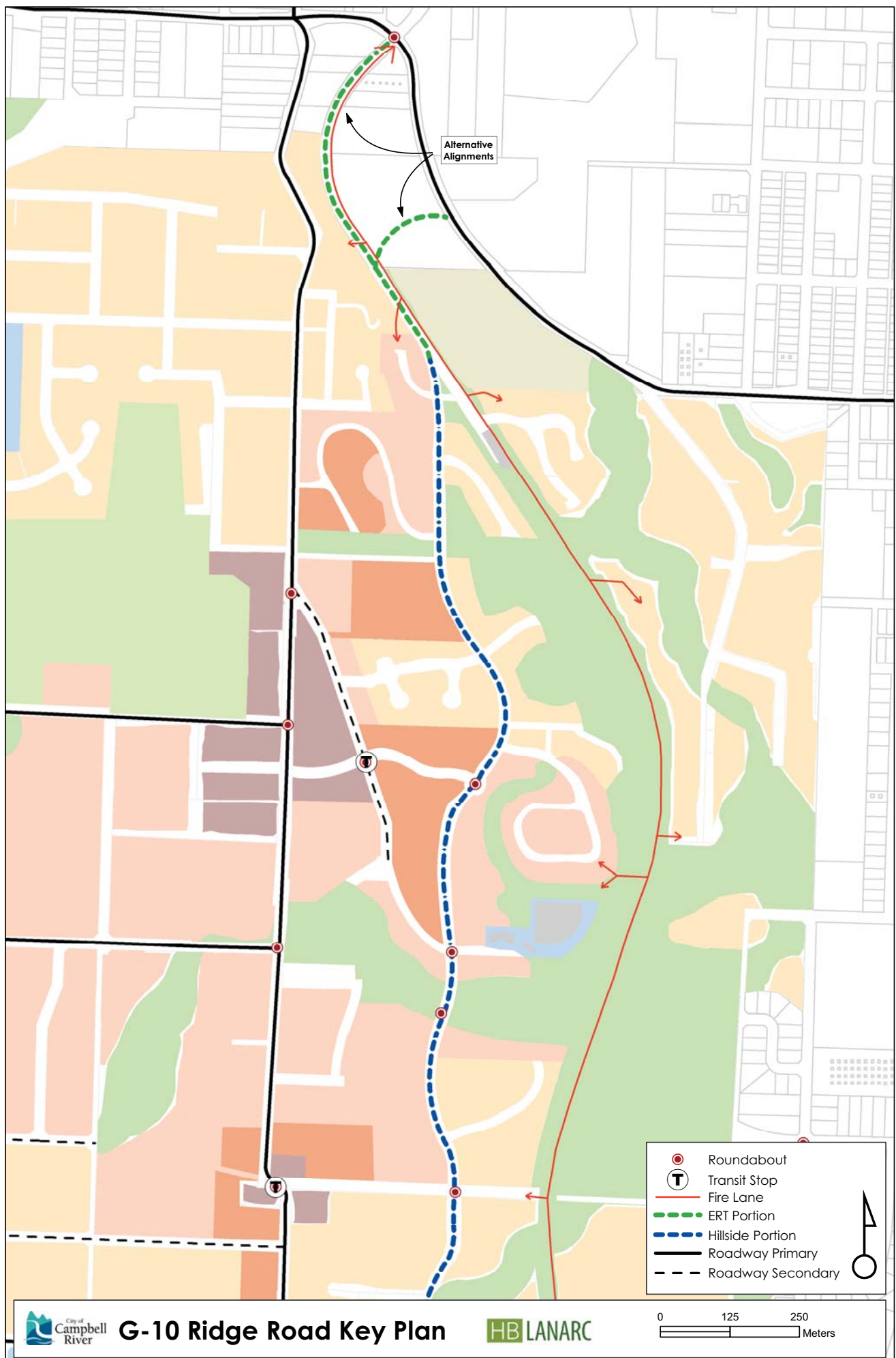
Alternative Alignments

- Roundabout
- T Transit Stop
- - - Stormwater Diversion
- Stormwater Pond
- Willis Connector (future)
- Fire Lane
- Roadway Primary
- - - Roadway Secondary

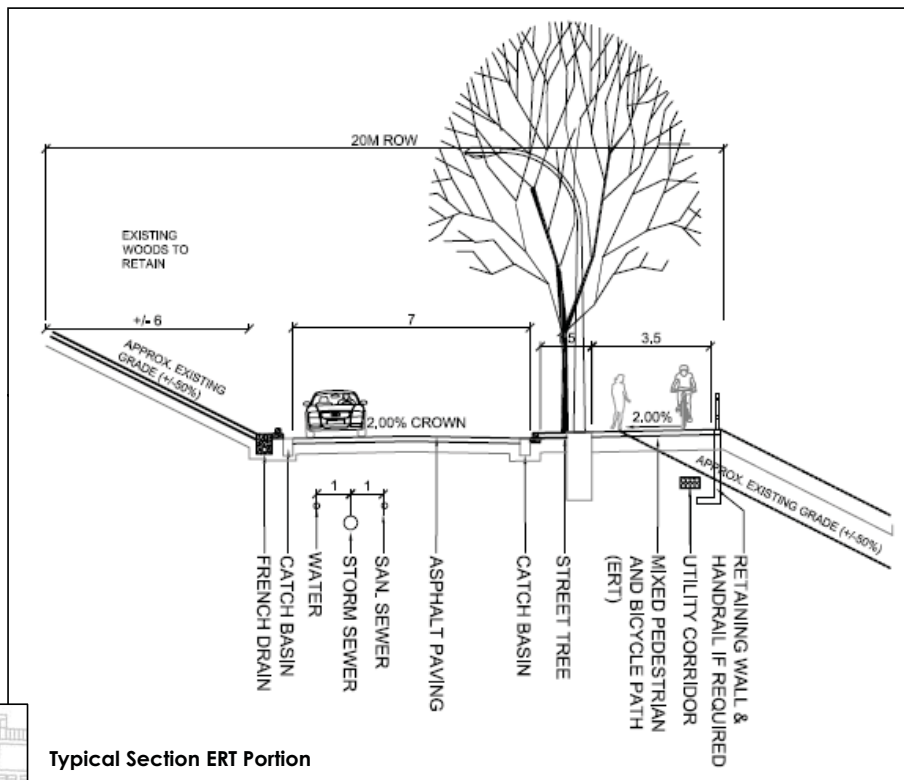


G-9 Infrastructure

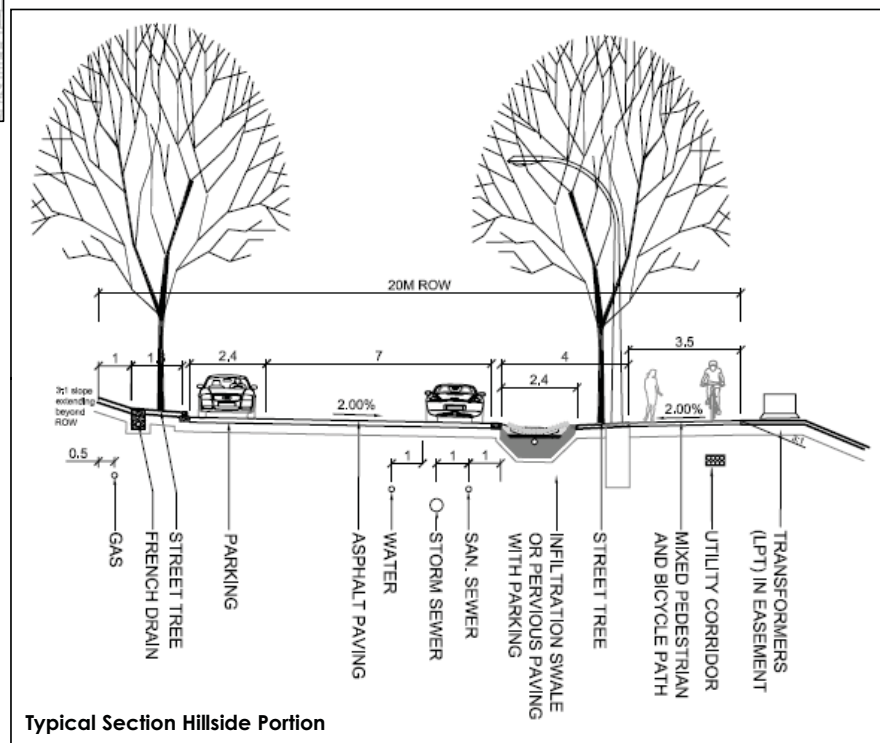
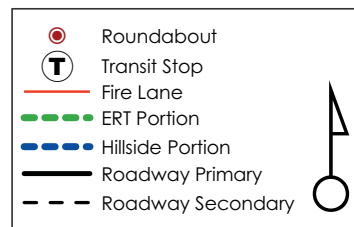




Note: Alignments are conceptual and may vary. Not all roads are shown.



Typical Section ERT Portion



Typical Section Hillside Portion