

Gabriola Island

Final Report



Climate Change Policy Implementation Recommendations

Prepared for the
Gabriola Island Local Trust Committee

May 7, 2013

C I T Y  S P A C E S

Table of Contents

Introduction	1
Project Background	1
Climate Change Context	1
Methodology	1
Recommendations	2
OCP & LUB Amendment Process And Criteria.....	2
New Development Permit Areas And LUB Amendments	4
Village Commercial Zoning & DPA-7	6
Commercial Parking	9
Sea-level Rise	12
Other Recommendations Per Section 8	14
Toolkits & Resources	17
Conclusion	18

A. Introduction

The Gabriola Island Local Trust Committee (LTC) has adopted Greenhouse Gas (GHG) emissions reduction targets as well as policies and actions to achieve those targets through its Official Community Plan (OCP). Yet, policy is only the first step. To achieve the established targets, the LTC understands the importance of implementation and, equally, the role of the Land Use Bylaw and other regulatory documents in facilitating GHG emissions reductions and climate change mitigation – and, to a lesser degree, adaptation.

As a result, CitySpaces was retained to conduct industry best practices research towards identifying – through this report – potential amendment recommendations that the LTC may consider for its Gabriola Island Land Use Bylaw (LUB) and related Development Permit Area Guidelines.

Project Background

This initiative is part of the second phase of a broad OCP and LUB review process that the LTC is undertaking. Phase 2 includes work related to agriculture and food security, parks and trails, and climate change, among other topics, forming subsequent and separate reports from this study. Other recent, related initiatives include the LTC-hosted workshop *Greening Our Shores*, which included sessions on shoreline mapping and conservation.

Climate Change Context

Climate change mitigation (i.e., GHG emissions reduction) and adaptation are salient and pressing planning issues, regardless of location. Municipalities across British Columbia and LTCs throughout the Islands Trust are responding with regulatory changes and related initiatives to reduce emissions and prepare for the impacts of a changing climate – e.g., rising sea levels; longer, dryer summers; and warmer, wetter winters.

Moreover, municipalities worldwide are recognizing the multiple direct and indirect benefits of meeting the climate change challenge. Initiatives like the encouragement of green buildings, transit-oriented development, and renewable energy systems not only prepare for and mitigate climate change but also offer immediate return on investment to local governments and provide multiple social, economic, and environmental benefits.

With that in mind, it is worth noting the unique conditions of Gabriola Island as a community dominated by low-density, rural residential development that limits opportunity for key climate change initiatives, such as public transportation systems or large-scale green infrastructure projects.

That said, there are a number of proven strategic areas that remain and are suitable for further community discussion: more efficient land use patterns, individual building efficiency, responding to sea-level rise, maximizing existing infrastructure, and small scale food, water, and energy systems.

Methodology

With a focus on those strategies that “fit” the Gabriola community, this report – and the recommendations within – provide a synthesis of the findings from our desktop research and the insights we have gained implementing sustainable regulatory frameworks throughout the Province.



Specifically, the report responds directly to the five subject areas identified by staff that relate to Section 8 *Climate Change Adaptation and Greenhouse Gas Emission Reductions* of the OCP. CitySpaces summarized the five areas of focus with the following five questions, and addressed each in turn in the development of our recommendations:

1. How can the OCP and LUB amendment processes (e.g., criteria, checklists, guides) be revised to better address climate change adaptation and GHG reductions?;
2. How can new Development Permit Area (DPA) powers available to municipalities and related Land Use Bylaw amendments be best implemented for Gabriola?;
3. How can the existing Village Commercial zoning and DPA-7 guidelines be amended to promote walkability in the Village?;
4. How can existing commercial parking regulations be amended to encourage public transit, smaller vehicles, non-polluting vehicles, car-sharing, and permeable surfaces on Gabriola?; and,
5. How should natural boundary setbacks be amended and other initiatives undertaken to address the potential impacts of sea-level rise?

With these questions as a guide, CitySpaces cast a wide net to identify the most progressive best practices and related case studies from other municipalities. The result was the development of a large research databank of possible opportunities and directions the LTC could take toward implementing the community's GHG reduction aspirations. With feedback from Islands Trust staff, the findings were narrowed and formed the base for the following recommendations.

B. Recommendations

OCP & LUB Amendment Process and Criteria

INTRODUCTION

The existing amendment processes for Gabriola are straightforward and, while they may be reflective of community interests and Island Trust staff resources, they are not supportive of the directions of the OCP. The Rezoning Application Form and accompanying Guide solicits general information about the amendments requested, the uses and buildings proposed on the subject property, and possible adjacency implications. Yet, the application form does not provide direction on what the municipality may require or prefer in terms of development characteristics.

By changing or adopting application criteria, pre-application requirements, and related rezoning provisions, these processes can better inform applicants and, in doing so, orient development towards meeting the objectives and policies of Section 8 of the OCP. For example, pre-application sustainability checklists, while not currently used by Gabriola, are widely used elsewhere in the province as a further measure beyond the OCP and LUB to achieve OCP and sustainability objectives. Similarly, other municipalities include detailed criteria within their application materials, as a substantive means to guide development towards approval. Such robust amendment procedures make explicit those development practices that are encouraged, incentivized, or required for GHG reduction and climate change mitigation.



The following recommendations are presented to the LTC for their consideration, to help the ongoing amendment process further advance the OCP climate action objectives.

RECOMMENDATIONS

1. Application Criteria

- (a) Introduce clear and publicly-available sustainability criteria for reduced GHG emissions that applications will be assessed against as part of the Rezoning Application Guide and process.

Criteria may include provisions related to environmental protection, siting and development location, and energy and water use. Such developed and explicit criteria could limit the need for a checklist (see 2a, below), reduce additional staffing and administrative demand, and still facilitate OCP climate action objectives. See the [Far North Coast](#) (Australia) list of Sustainability Criteria.

- (b) Insert rezoning criteria to require (or encourage) green building standards or commitments with rezoning.

Utilizing such criteria, municipalities can require that residential rezoning applicants achieve BuiltGreen “Gold” and EnerGuide 80 standards. See [Bowen Island](#) Green Building Standards for Residential Rezoning.

2. Checklists & Pre-Application Requirements

- (a) Consider adopting a required or incentivized sustainability checklist as part of the Bylaw Amendment Application Form.

Building on the idea of explicit application criteria, an application checklists can shift more of the onus on the developer to fill out a scorecard-like checklist and meet set sustainability standards. While this evolves the idea of application criteria, a new checklist would require significant development and on-going staffing capacity.

Checklists can either be voluntary with a focus on education, a mandatory requirement of the rezoning process that stimulates innovation, or incentivized and serve to encourage green development – with each approach having its related staffing and implementation implications. It should be noted that voluntary checklists within the Islands Trust have suffered from a lack of uptake (and so impact), despite the appealing educational component.

Therefore, an incentivized checklist is suggested. It should also be noted that the [Regional District of Nanaimo's](#) (RDN) Sustainable Checklist, which provides incentives to homeowners and owner-builders up to \$1000 for achieving high levels of building performance, may be open to Gabriola property owners.

Checklists are advantageous in that they may address building interiors, which zoning bylaws and DPA guidelines cannot. It is recognized, however, that the existing development permit process on Gabriola does not involve a building inspection, and adopting one would necessitate partnering with the RDN. See also the voluntary checklists of [Salt Spring Island](#), as well as the [Southern Islands](#) and [Lasqueti Island](#) guides to green building.



3. Facilitation Strategies

- (a) Consider amending the LUB to pre-zone private property at key locations compatible with OCP provisions.

Private property can be pre-zoned by a municipality to encourage new uses or characteristics compatible with the OCP – and phase out those contrary to it. An example of this approach would be the pre-zoning of property within or adjacent to the Village to allow smaller lots or more residential units which will – over time – locate more people close to employment and services, enhancing opportunities for active transportation – and so reducing vehicle use and GHG emissions.

New Development Permit Areas and LUB Amendments

INTRODUCTION

In 2008, the Province, supporting the provisions of Bill 27 and the work undertaken by municipalities across the Province in setting GHG reduction targets, expanded the municipal powers relating to the use of DPAs for addressing Climate Action. Such expanded provisions include:

1. the promotion of energy conservation;
2. the promotion of water conservation; and,
3. the promotion of the reduction of greenhouse gas emissions.

The Gabriola OCP does not currently include a DPA for Climate Action. It is recommended that the LTC take advantage of these new powers to better meet the objectives and policies of Section 8 of the OCP. It is acknowledged that not all Climate Action guideline provisions may be appropriate or feasible on Gabriola. However, with this in mind, the following recommendations are presented as a basis that could underpin the development of new Climate Action DPAs in the future.

In addition, a number of reflective zoning measures are also outlined, noting that regulations, or the absence of regulations, may inadvertently challenge innovation and hinder the delivery of GHG emissions reduction objectives. Further, a comprehensive regulatory framework is one where the LUB and DPA guidelines are consistent and supportive in their respective directions.

RECOMMENDATIONS

1. DPA Amendments

- (a) Designate one or more DPAs for Climate Action in the OCP and develop guidelines for Energy and Water Conservation and GHG Emissions Reduction.

- i. Example and model provisions:*

- Use deciduous trees on the southern- and western-facing sides of a building to maximize the warming effect of solar radiation in winter months and the cooling effects of shade in the summer months.¹

¹ Model DPA provisions taken from [Development Permit Areas for Climate Action](#).

- Design subdivisions that cluster buildings, retain existing vegetation and natural areas – for carbon storage and GHG reduction – and maximize infrastructure use.
- Buildings and structures are to be designed so as to minimize the developed footprint on the site during and after construction (See Climate Action DPAs for [Lake Country](#) and [Comox](#)).
- Where appropriate, install a pipe distribution system for a district energy network.² This may involve incorporating district energy pipes with all new conventional infrastructure, developing a usable network in a piecemeal fashion over time – suitable for the Village area. Or, it may involve localized systems developed at one time – suitable elsewhere.
- Strongly encourage the use of bioswales with native wetland plants as linear retention basins that move run-off as slowly as possible and help biologically break down pollutants. See [Castlegar's](#) Energy, Water, and GHG Reduction DPA.
- Apply 'xeriscape' or low water use landscaping techniques to minimize and/or eventually eliminate the need for irrigation.

2. Zoning Amendments

(a) Consider combining the development of DPAs for Climate Action with other regulatory strategies.

- Encourage enhanced envelope design and thermal performance through the use of external clad insulation or greater internal wall cavity/insulation provision by calculating gross floor area from the inside wall, as opposed to the common approach of using the external wall face.*
- Similarly, consider amending the LUB to add a definition of floor area ratio and lot coverage that excludes the following from calculations:*
 - mechanical rooms so long as they contain green building systems/high efficiency mechanical equipment;
 - green building apparatuses; and,
 - vertical service and ventilation shafts.

See the [District of Elkford](#) for further examples.
- Consider renewable energy devices (solar hot water, solar photovoltaic, wind, geothermal, etc.) as permitted structures (with corresponding height and siting restrictions), or exempt such structures from height and siting requirements. Alternatively, consider small-scale renewable energy DPAs at appropriate sites (e.g., coastal zones and higher elevations for wind).*

² District energy and heating are systems for distributing heat generated at or extracted from a centralized location for residential and commercial use. An underground system of water- or steam-filled pipes moves heated fluid before being returned, reheated, and recirculated. The result is a more energy efficient and clean heating system. In a more rural context, there are many examples of district energy systems in which the heat is generated via biomass (e.g., straw) or biogas (e.g., manure converted to methane) or other agricultural processes (e.g., extracting heat from dairy milk).



It is noted that Trust staff have recently prepared a report, [Renewable Energy Technology in the Trust](#), intended to outline land use bylaw definitions and regulations specifically for domestic small scale wind energy.

- iv. *Require the provision of natural drought tolerant landscaping, the retention of existing stands of trees and plantings, and the increased use of permeable (and where possible high-albedo materials) to minimize inefficient use of potable water sources and reduce heat-island effect.*
- v. *Consider alternative building orientation in order to reduce the energy requirements of the building for lighting, space conditioning (heating and cooling) and ventilation; as outlined in a report from a certified professional.*
- vi. *Fast-track development approvals for “green” development (see 1.3 in Section 6. Other Recommendations for a further explanation).*
- vii. *Tax exemptions for conservation (i.e., NAPTEP) or green buildings (also see Section 6).*

Village Commercial Zoning & DPA-7

INTRODUCTION

A key GHG reduction strategy is transportation modal shift – getting people out of their cars and turning to more active modes such as walking and cycling. While Gabriola’s low-density, rural development pattern makes this a challenge, the Village presents an opportunity for reduced driving and increased active transportation. However, the existing zoning and DPA provisions for the Village do not sufficiently encourage walking (or cycling) nor further the objectives of Section 8 of the OCP.

Presently, the Village is a car-oriented centre that lacks pedestrian and cycling amenities. The recommended zoning and DPA guideline amendments could add to an increased perception of safety and comfort walking in and around the Village.

To that end, the following recommendations are presented to the LTC for consideration.

RECOMMENDATIONS

1. OCP Amendments

- (a) Amend BL 262 of Section 2 of the OCP to permit more residential units in and around the Village.
 - i. *Mixed use buildings (e.g., residential over retail), small lot residential, coach housing, innovative strata or shared-equity models of housing (e.g., cohousing, pocket neighbourhoods), and appropriately-scaled multi-family developments (e.g., 2-storey apartment buildings) are recommended forms of increased residential use.*

The expansion of residential units in the Village addresses multiple community issues and objectives: reducing sprawl and increasing pedestrian access, providing “eyes on the street” and increased community safety, increasing housing options and affordable housing, and improving markets for business.

Furthermore, these options maximize the use of existing land and prior infrastructure investments. However, it is noted that water resources, servicing requirements, and drainage are issues that need to be appropriately addressed in the context of Gabriola.

A further manifestation - and another benefit - of such forms of housing is the potential inclusion of more affordable housing, particularly for seniors and those with special needs.

Character retention should also be an essential goal of any modest scaled and more intensive development that may stem from amendments related to densification.

- (b) Consider amending the OCP to accommodate wider-reaching GHG reduction and climate change provisions, beyond those related to commercial land use. See [Saturna Island's](#) report on suggested general OCP amendments to reduce GHG emissions.

2. Zoning Amendments

- (a) If permitted in the OCP, then also amend the VC1 and VC2 zones to permit more residential units in the Village as well as consider adding multi-family residential as a permitted use towards diversifying the existing land use pattern.
- (b) Amend the VC1 and VC2 zones to allow smaller commercial and residential lots in and adjacent to the Village to facilitate a walkable built form.
 - i. *Consider reducing the minimum lot sizes, subject to the satisfaction that water and septic could still viably be accommodated.*
 - ii. *If implemented, concurrently consider increasing maximum allowable Lot Coverage and Floor Area Ratio to encourage a compact commercial hub.*
- (c) Amend the VC1 and VC2 to decrease the minimum front setback to establish a strong pedestrian-scaled walking environment.
 - i. *Consider reducing the current front setback from 6.0m to 0m.*
 - ii. *Add supplementary provisions to DPA-7, such as this example from [Salt Spring Island](#) (OCP, E.1.4.9): "To ensure a compact and pedestrian-oriented commercial area in village cores, new commercial developments in the Ganges Village Core, the Channel Ridge Village Core and in Fulford Harbour Village should ideally be located with no or little setback from the front property line. Minor variations could be included to provide small public spaces and pedestrian amenities along the streetfront."*
- (d) Consider the use of Amenity Zoning to encourage compact development, green development, rental housing, and affordable housing. ‘



- (e) Utilize Amenity Zoning in the form of density bonusing to facilitate the provisions of compact developments, green developments, rental housing, affordable housing, or other valued community amenities. Density bonusing is the establishment, through zoning, of incremental steps of increasing density thresholds along with a corresponding amenity contribution (be it in-kind or cash contribution) that shall be voluntarily provided by the developer/applicant in order to secure those steps.

In terms of establishing an amenity zoning framework, a “base density” would need to be established, described either as a ratio of floor area relative to the area of the lot or as an extension of overall lot size. Further, cash contributions would require that a reserve fund be established through a bylaw which would describe how the funds are to be used towards delivering amenities. As well, through a process such an OCP review, staff and residents should describe what amenities are desired by the community. Overall, encouraging the provision of dwelling units close to services through the use of amenity zoning presents a strategic means to shift the community away from a car-oriented development pattern and towards GHG emission reductions.

Local examples of such strategies include [Quesnel](#), where increased densities are permitted close to downtown via amenity zoning; [Langford](#), where the creation of smaller residential lots close to services is permitted through amenity zoning; and, [Revelstoke](#), where increased densities are permitted in the Central Business District in exchange for the provision of community and environmental benefits.

- (f) In the LUB, amend Parking Requirements to decrease or eliminate off-street parking minimums in the Village as well as pursue innovative means of maximizing land (and spaces) allocated for parking rather than contributing further to an auto-orientated setting. See the following section *Commercial Parking* for related recommendations.

3. DPA Guideline Amendments

- (a) Amend and add provisions in DPA-7 to require more comprehensive urban design and walkability characteristics, including traffic calming.
- (b) DPA-7 should include multiple and inter-related provisions to promote walkability and reduce auto-orientation in the Village. Example provisions could include:
 - i. *Express at-grade retail frontages as multiple individual storefronts with a width of not more than 18m;*
 - ii. *Ensure that at-grade retail frontages offer physical and visual connectivity with the sidewalk through the use of large doors or windows and allow for the retail program to become part of the street;*
 - iii. *Avoid unbroken expanses of blank wall, while concurrently limiting glazing on exposed sides for the purpose of climatic design;*
 - iv. *Encourage the provision of seating or public gathering areas located close to retail stores in order to help activate such spaces; and,*

- v. *Require the provision of weather protection and/or shading devices oriented to the street and any public gathering space.*
- (c) Amend DPA-7 to increase the provision of cycling racks and promote car-sharing.
- (d) Ensure that cycling racks are provided in a location that is protected from weather, convenient to access from the building main entry/access points, and fosters a sense of security.
- (e) Encourage car-sharing in any new multi-family development, should they be permitted. Car-sharing on an individual, small-scale (e.g. building scale) basis is feasible and common elsewhere; even though an Island-wide car-sharing system presents challenges and may not meet the needs of intended users.
- (f) Amend DPA-7 provisions to expand upon existing landscaping provisions ensuring that the public realm and on-site stormwater management directions are highlighted.
- (g) Use vegetated channels such as bioswales in place of concrete storm channels or mowed ditches to capture, store, filter, and slowly release rainwater.

Commercial Parking

INTRODUCTION

Under the LGA, local governments may adopt parking bylaws – which often become part of a comprehensive LUB, as in Gabriola’s case. Typically, municipalities place the focus of such bylaws upon the design, location, and required allocation of parking and loading spaces within specific zones or by specific uses. However, such bylaws also present valuable tools to encourage alternative forms of transportation through the accommodation of smaller cars, motorcycles and scooters, bicycles, and alternative fuel vehicles; all of which can facilitate the creation a more walkable and less auto-oriented built form. Additionally, DPAs provide an extension of this pursuit, allowing a municipality to pursue detailed design characteristics.

Assessing Gabriola’s parking regulations in light of this potential, it was observed that current bylaws and guidelines fall short of encouraging less auto dependance and enabling GHG emissions reduction strategies – such as walking, smaller and alternative fuel vehicles, and the expanded use of permeable surfaces. Further, It is recognized that any review – in terms of both required quantity of parking spaces and inherent design considerations – needs to also be reflective of the community’s existing characteristics (e.g., demographic profile, mode split, etc.).

Noting that, and to help reduce auto-dependance while emphasizing the expansion of alternatives that support the policies of Section 8 in the OCP, the following recommendations are presented to the LTC for their consideration.

RECOMMENDATIONS

1. Parking Bylaw Amendments

- (a) Consider introducing parking maximums to facilitate the shift away from the exclusive use of minimum parking standards.



- (b) Consider adding provisions that permit applications to pool parking off-site (e.g., within 400m or a 5-minute walk of the subject site), as well as permitting the sharing of the provided spaces amongst the various uses. The benefit of sharing spaces stems from the observation that a) different uses have differing peak parking demands at various times of day or days of the week; and b) minimum parking requirements may be based on annual peak demand (e.g., pre-Christmas period for a shopping mall), rather than average weekly or daily peak demand.
- (c) Consider establishing a single central public Village parking lot – consolidating existing lots/ spaces rather than creating new ones – to enhance the pedestrian environment and so facilitate greater walkability. Such a central lot/spaces could be supplemented by on-street parking, which may also act to buffer pedestrians from vehicular traffic.
- (d) Consider reducing the minimum off-street parking requirements.

- i. *Some example strategies utilized by other similarly auto-focused communities include:*
 - Reduce the minimum non-residential parking requirement to 0 spaces in the Village area; and,
 - Adjust the minimum residential parking requirement to 1 space per dwelling unit for multi-family forms of development.

Such measures would necessitate that the public park on the street or in a nearby lot(s), possibly a central Village lot. It is also noted that parking reduction measures are not always advanced by retail tenant preferences, resulting in a market driven solution that results in a parking ratio in excess of the required standards. Though, conversely, owner-builders of retail development may in fact favour reduced parking requirements, as it reduces development costs.

- (e) Consider requiring parking be sited at the rear of buildings, to reduce the visibility of the automobile.
- (f) Add a provision that requires all paved parking areas include shade trees that create a strong shade tree canopy.
- (g) Introduce requirements that all parking areas in excess of three spaces or more include green infrastructure that increases infiltration and filtration on site – e.g., via bioswales and rain-gardens rather than ditches – as well as directs stormwater away from buildings and into vegetated areas.
- (h) Add provisions that permit the substitution of small car parking spaces for either all or a portion of the required parking spaces.
 - i. *In Squamish, the Zoning Bylaw identifies that in the downtown area 100% of the total parking spaces required by a development may be provided as small car spaces, increased from the 15% limit permitted for developments outside the downtown.*

- (i) Accommodate alternative fuel vehicles by including provisions that stipulate that a portion of the parking spaces required by a development be accompanied by an electrical outlet.
 - i. *In the District of Summerland it is required that a minimum of 10 percent of the parking spaces required for townhouse and apartment developments shall include receptacles to accommodate electric vehicle charging equipment.*
- (j) Encourage the provision of parking spaces for motorcycle and scooters by discounting the required number of parking spaces for each motorcycle/scooter parking space provided.
 - i. *Example provision from the District of Summerland:*
 - Where Parking Spaces are designated for the Use of motorcycles or scooters, such designated motorcycle/scooter Parking Spaces shall each be counted as the provision of 0.5 required vehicle Parking Spaces, to a maximum of 15 percent of required Parking Spaces.
- (k) Establish provisions for bicycle parking, both for Class A secured spaces and Class B rack spaces, for all new non-residential and multi-family residential developments.
- (l) Introduce a cash in-lieu alternative to the provision of either auto or bicycle parking spaces, with the funds being placed in a municipal reserve fund and applied to either the provision of a central municipal parking facility or infrastructure/capital projects that may encourage more active modes of transportation.

2. DPA Guideline Amendments

- (a) Consider adding a provision to DPA-7 that encourages the provision of parking spaces for alternative vehicles such as shared, plug-in hybrid, electric, and other alternative-fuel vehicles at prioritized locations within the Village.
- (b) Amend DPA-7 to require new development to provide bicycle and motorcycle/scooter parking in convenient locations adjacent to central building entrances. Exterior bicycle and motorcycle/scooter spaces should be located in a well-lit area with site lines from the main building entrance and/or nearest public road.
- (c) Amend DPA-7 to locate parking lots at rear, where feasible, encouraging pedestrian connectivity with the building main entrance.
- (d) Introduce through DPA-7 requirements the use materials, colours, and patterns to mark the transitions between driving, parking, and pedestrian areas. Consider also encouraging the design of parking lots and driveways as pedestrian places where vehicles are permitted.
- (e) Consider the coordination of any use of colour to differentiate pedestrian and vehicle areas within a parking lot with the provision of high albedo surfaces to reduce heat island effect.
- (f) Consider requiring all parking lots to be visually screened from pathways, sidewalks, paths, streets, and first floor dwelling units in multi-family developments.



Sea-level Rise

INTRODUCTION

A climate change adaptation strategy very relevant to Gabriola is compensation and preparation for sea-level rise and its impacts on the built environment (e.g., housing and infrastructure), ecology, agriculture, and natural resources, including potable groundwater. Under the *Local Government Act*, municipalities have a number of tools to begin adapting to the effects of – and perhaps mitigating – sea-level rise.

The existing policy of Gabriola's OCP suggests that the LTC consider amending LUB provisions regarding setbacks from the ocean in relation to sea-level rise. It is recommended that the LTC not only amend the LUB but also consider other amendments, including additional provisions in the OCP.

To that end, the following recommendations are presented to the LTC for consideration.

RECOMMENDATIONS

1. OCP Amendments

(a) Amend the OCP Background section to note the threat of sea-level rise.

i. *Example from Thetis Island:*

- Global climate change represents a threat to coastal development through the following:
 1. *predicted sea level rise and with it, more extensive coastal inundation;*
 2. *higher wave heights and storm surge flooding;*
 3. *increase shoreline erosion; and,*
 4. *increased rainfall and runoff compounded by drainage problems due to higher downstream sea levels.”*

(b) Amend the OCP Objectives section to include adapting to sea-level rise:

i. *Example from Thetis Island:*

- To adapt to sea level rise through land use regulation and ecosystem restoration.

(c) Add an OCP Policy regarding:

i. *Identifying and mapping areas vulnerable to sea-level rise.*

- e.g., The Local Trust Committee should identify and map areas vulnerable to sea level rise.

ii. *Establishing setbacks in the Land Use Bylaw to protect development from sea-level rise*

- e.g., The Local Trust Committee should establish setbacks in the Land Use Bylaw to protect development from sea level rise predictions for 2100.

- iii. *Encouraging ecosystem restoration or rehabilitation to accommodate sea-level rise*
 - e.g., The Local Trust Committee should encourage ecosystem restoration or rehabilitation works to accommodate rising sea levels.

(d) Add adaptation to sea-level rise as an explicit objective of the proposed Development Approval Information – Circumstances and Special Conditions (OCP Amendment No. 1, 2012).

2. DPA Guideline Amendments

(a) Consider creating a Sea-level Rise DPA.

A Sea-level Rise DPA, taking the form of either a separate additional DPA or as conditions added to existing DPAs, can respond to the threat of sea-level rise by protecting the existing shoreline, adjacent foreshore, and upland areas for their ecological values and guarding against erosion and damage to existing and future buildings. Thus, to be approved, a development application must demonstrate that the development neither contributes to, nor is unduly subject to, existing or potential future shoreline hazards, nor does it damage the shoreline and marine environments.

Sea-level Rise DPAs tend to require assessments carried out by qualified coastal professions that demonstrate how development will a) not cause or be subject to erosion, landslip, and flooding; b) not damage the marine environment, and c) be in accordance with Provincial and Federal legislation.

Such requirements bring implications and considerations for the development of a Sea-level Rise DPA. Sea-level Rise DPAs tend to require developers to hire a qualified professional(s) to perform analyses and prepare assessment reports; this may have implications for Gabriola's staffing and in-house expertise. Therefore, further investigation may be necessary to determine suitability for Gabriola and the Islands Trust.

i. *Examples include:*

- Thetis Island Marine Shoreline DPA, which applies to all development up to 15m above the high water mark; as described through a number of [staff reports](#), including one directly related to sea-level rise (January 26, 2011);
- [West Howe Sound](#) Shoreline Protection and Management DPA; and,
- Beaubassin-est (NB) Sea-level Rise Protection Zone.

(b) Establish a development permit information area specifically for sea-level rise. Examples include:

- i. [North Pender Island](#);
- ii. [Port Alice](#); and,
- iii. [Chilliwack](#).



3. Other Considerations

- (a) Consider adopting the Coastal Development Rating System.
 - i. *Thetis Island* is giving this consideration: “The Coastal Development Rating System includes credits for having a Climate Change Adaptation Plan. Although this rating system is incentive-based, it contains valuable information for considering a regulatory approach to adapting to sea level rise in DPA guidelines.”
- (b) Consider conducting a study of the on-going and potential impacts of sea-level rise on Gabriola.

Other Recommendations per Section 8

INTRODUCTION

Section 8 of the OCP covers a number of additional GHG emissions reduction strategies and Climate Change policies not immediately addressed in the scope of work of this study. However, it is recommended that the LTC consider some additional strategies to facilitate meeting OCP objectives and policies.

It is recognized that beyond this study, additional efforts have been or are being carried out currently. Therefore, this section does not attempt to address areas such as scale food production, as we note that agricultural analyses is being undertaken in parallel.

Yet, through discussions with Islands Trust staff, a number of additional possibles amendments or steps were identified and are presented below for further consideration by the LTC.

RECOMMENDATIONS

1. Regulatory Incentives to Encourage Green Development

- (a) Consider extending the use of covenants beyond NAPTEP to encourage Green Buildings and Green Energy.
 - i. *Covenants may be placed on title to detail the commitment and standards for achieving energy efficiency, producing clean energy, or inclusion of particular sustainability features on a property. These can be applied as part of the re-zoning process. An example is the [Whistler](#) Green Building Policy, which includes a green building commitment with rezoning.*
- (b) Consider fast-tracking and offering rebates on application fees and Building Permit rates to low-impact development applications. Also, consider offering rebates to low-impact developments.
 - i. *This may involve putting green developments to the front of the development permit and/or rezoning application queues. [Saanich](#) has a Private Sector Green Building Policy that fast-tracks green developments and offers rebates to homes built to green standards.*

2. Amendments for Land Conservation

- (a) Consider creating a DPA for sensitive ecosystem areas.
 - i. *For example, [Ellison's Aquatic Ecosystem Development Permit Area](#).*
- (b) Consider regulatory changes that enable development to cluster away from environmentally-sensitive areas and/or valuable agricultural lands.
 - i. *The City of Colwood encourages the clustering of development away from Esquimalt Lagoon and Selleck Creek. The Village of Anmore has developed a specific zone intended to cluster development and preserve hillside and sensitive environmental areas.*
- (c) Consider establishing DPA provisions for the use of screening and/or landscaping to protect the natural environment.
 - i. *North Vancouver has a [Comprehensive Environmental Bylaw](#) and [application questionnaire](#) which include such provisions.*

3. Water Conservation & Management

- (a) Consider furthering the Water Budget Program to adopt a Water Balance Model for DPA guideline and bylaw development.
 - i. *The Water Balance Model promotes a watershed-based approach that ensures developments reduce stormwater runoff volumes and functions to pre-development levels. Examples include the City of Courtenay and the Districts of Saanich and Sooke.*
- (b) Consider amendments to encourage the harvesting of rainwater and protection of groundwater quality, particularly with respect to pollution, climate change, and sea-level rise.
- (c) Consider DPA provisions that encourage or require rainwater catchment, particularly in the Village, as well as underground cisterns. This could facilitate the expansion of residential and affordable units in and around the Village with respect to well-water limitations.
- (d) Consider developing an Integrated Water Management Plan or related bylaws and guidelines for the purpose of climate change adaptation, long-term water security, and the facilitation of more walkability development patterns.
 - i. *[Central Saanich – Integrated Stormwater Management Plan](#)*
 - ii. *[Chilliwack – Integrated Stormwater Management Plan](#)*
 - iii. *[Kelowna – Integrated Stormwater Management Services and Policies](#)*
 - iv. *[Metchosin – Protection and Management of Rainwater Bylaw](#)*
 - v. *[Okanagan – Sustainable Water Strategy](#)*



4. Energy Innovation

- (a) Consider developing a Community Energy Plan.
 - i. *For example, [Burns Lake](#) is identifying and quantifying existing energy consumption and resources; then planning for their energy future.*
- (b) Consider implementing model renewable energy policies and regulatory provisions.
 - i. *Resources include:*
 - [Policy and Governance Tools for Local Governments for Renewable Energy](#)
 - [North Vancouver](#) uses a local service area bylaw to create district energy service areas.
 - [CANWEA Model Wind Energy Bylaw](#)
 - [Community Energy and Emission Planning](#) – for local government

5. Advocacy and Education

- (a) Consider additional checklists and scorecards to encourage sustainable community design.
 - i. *e.g., Bike-ability checklists, Smart Growth checklists, Green Building checklists*
 - [Bike-ability Checklist](#)
 - [Esquimalt - Green Building Checklist](#)
 - [Salt Spring Island – What to look for in an Eco-Home](#)

6. Climate Change Adaption

- (a) Consider undertaking a Climate Adaptation Project.
 - i. *These projects are used to identify potential local climate impacts, assess local vulnerabilities and sensitivities, and develop adaptation strategies. Example:*
 - [Kimberley](#)
 - ii. *Municipalities have also undertaken studies to understand the risks and impacts of climate change, including:*
 - [Kimberley](#)
 - [Vancouver](#)
 - [Castlegar](#)

7. Green Communities

- (a) Consider studying the potential for integrated wastewater management, greywater systems, and rainwater re-use in the Village.

Toolkits & Resources

INTRODUCTION

It was also requested that CitySpaces identify resources and toolkits that may assist Island Trust Staff further implement GHG emission reduction and Climate Change strategies.

RECOMMENDATIONS

(a) [Green Bylaws Toolkit](#)

- i. *This is a very useful toolkit with practical information regarding developing policies, along with an assessment of inherent benefits and constraints. It also has a large reference list and many example policy provisions.*

(b) [Preparing For Climate Change: Implementation for Local Governments](#)

- i. *A wealth of information regarding climate change and regulatory tools.*
- ii. *Also, there is a [related](#) document by Federal Government.*

(c) [The Green Buildings Guide: Tools for Local Government to Promote Site Sustainability](#)

(d) [Retooling for Climate Change](#)

- i. *A useful site that also includes a toolkit database.*

(e) [Smart Growth Toolkit](#)

- i. *An overview as well as tools and strategies for building “smarter” communities.*

(f) [Groundwater Bylaws Toolkit](#)

- i. *A collection of land use and management tools to help local governments protect groundwater resources.*

(g) Similarly: [Thinking Beyond Pipes and Pumps](#)

(h) [Passive Design Toolkit for Homes](#)

(i) [The Green Infrastructure Guide](#)

- i. *Guide includes many case studies.*

(j) [Climate Change Visualization Guide](#)

- i. *A public guide for communicating and visualizing climate change impacts.*



C. Conclusion

The above recommendations represent best practices and the latest success stories from municipalities that are implementing GHG emissions reduction policies and adapting to a changing climate. Should the LTC adopt one or more recommendation, it will be taking a significant step towards implementing the policies of Section 8 in the OCP and facilitating targeted GHG emissions reductions.

To reiterate, the unique context of Gabriola – geography, development pattern, governance structure and capacity, socio-economic characteristics – presents challenges, but also opportunities, in reducing GHG emissions and adapting to the impacts of a changing climate.

Initiating this review of the OCP and related regulatory tools is the first and most proactive step toward putting Section 8 into practice. Moving forward, the discussed changes are envisioned as becoming a strategic and coherent suite of policy and regulatory amendments that work synergistically to provide the greatest community benefit. Further, it is recognized that effective strategies will likely come from the marriage of those changes that offer on-the-ground feasibility (i.e., those that are appropriate, practical, and palatable on Gabriola) and reflect administrative resources (i.e., those that can be developed, implemented, and regulated within staffing and budgetary capacities).

In an uncertain future, the LTC is positioning Gabriola to be ready for change, help reduce the severity of that change, and facilitate the social, economic, and environmental benefits of more sustainable community development.



Suite 585, 1111 West Hastings Street, Vancouver BC V6E 2J3 | 604.687.2281

5th Floor, 844 Courtney Street, Victoria BC V8W 1C4 | 250.383.0304

Suite 300, 160 Quarry Park Boulevard SE, Calgary AB T2C 3G3 | 403.336.2468

www.cityspaces.ca