



**GALIANO ISLAND
LOCAL TRUST COMMITTEE
SPECIAL MEETING
TUESDAY, OCTOBER 26, 2010
TO COMMENCE AT 1:00 PM
AT THE SOUTH COMMUNITY HALL
141 STURDIES BAY ROAD, GALIANO ISLAND, B.C**

- 1. CALL TO ORDER**
- 2. APPROVAL OF AGENDA**
 - 2.1 Questions on Agenda Items**
- 3. CORRESPONDENCE (none)**
- 4. OCP REVIEW PROJECT**
 - 4.1 Development Permit Areas – Staff report attached**
 - 4.2 Groundwater Study – Proposed Terms of Reference**
- 5. NEW BUSINESS**
 - 5.1 Upcoming Special Meetings – November 17th and November 30th**
- 6. TOWN HALL (time permitting)**
- 7. ADJOURNMENT**



STAFF REPORT

Date October 20, 2010

File No.: GL-OCP-2009.1

To: Galiano Island Local Trust Committee
For the meeting of October 26, 2010

From: Robert Kojima
Island Planner
Local Planning Services

CC: David Marlor, RPM

Re: OCP Review – Development Permit Areas

BACKGROUND: The review and update of the Official Community Plan (OCP) is a top priority project of the Galiano Island Local Trust Committee (LTC). This report will provide the LTC with a review of options related to existing and potential development permit areas.

A development permit area (DPA) is an area designated in the OCP that manages how development occurs on lands or locations that are of particular concern. Within these designated DPA, land alteration, construction and subdivision are restricted until a development permit is obtained. Land may be designated in an Official Community Plan (OCP) for one of a number of purposes, including the protection of development from hazardous conditions, protection of the natural environment, protection of farming, energy conservation, water conservation, reduction of greenhouse gas emissions and objectives for the form and character of commercial, industrial, or multi-family development.

Typically DPA are designated on a map that is a schedule to the OCP. However, some DPA may be designated by reference to legal descriptions of land or to a particular zone or land use designation (e.g. a DPA for commercial form and character). Designating land as being within a development permit area cannot prevent development that is permitted by zoning and which is consistent with the guidelines of the DPA. DPA guidelines should be more general and non-prescriptive than regulations, with specific conditions being included in individual development permits. For example, a guideline may state that wetlands should not be adversely impacted by development, and a subsequent permit could attach a site plan which identifies a particular wetland and specifies that no development or land alteration may occur within that area. The OCP may also specify circumstances under which a development permit is not required (exemptions). Usually exemptions are for minor or trivial activities, or identify activities that a local government cannot regulate (for example activities undertaken by the Crown) or does not wish to regulate (for example the form and character of structures not requiring a building permit). A development permit can only impose conditions on development in accordance with the guidelines specified for that DPA.

“Development” can include subdivision, construction, alteration or additions to a building, or, within a DPA for protection of the natural environment or for protection of development from hazardous conditions, alteration of the land (including vegetation removal). A development permit for the “protection of the natural environment, its ecosystems and biological diversity” may:

- specify areas of land that must remain free of development;
- require specified natural features or areas to be preserved, protected, restored or enhanced;
- require natural watercourses to be dedicated;
- require works to preserve, protect restore or enhance specified natural features; and
- require protective measures, including the planting of trees or vegetation for fish habitat or riparian area, to control drainage or control erosion.

“Specified natural features” can include features like habitat, wetlands, streams, older forests, bluffs and beaches, but a development permit should not extend protection to extensive or undifferentiated areas.

Mapping, or other methods designating a DPA should be of a standard that allows the public, landowners and planning staff to be able to reasonably ascertain whether a particular location is in a DPA or not. It can be difficult to effectively administer minor work in a DPA that does not require a building permit and is often invisible off the property.

Summary of Proposed Development Permit Areas

The following development permit areas are existing in the current OCP, or are proposed for inclusion in the new OCP.

1. Riparian DPA (DPA 1): based on the recommendations of the Ecosystem Protection Advisory committee, the LTC has already directed that a single ‘Riparian’ DPA be established that would incorporate streams subject to the Riparian Areas Regulation (RAR) and other, non-RAR, mapped streams.

Currently, there is updated mapping data available that includes RAR-designated streams and other known streams to an acceptable mapping standard. This mapping should replace the existing DPA 1, as there have been issues with the scale and accuracy of the stream mapping in the current OCP. This draft riparian DPA mapping could be further improved with inclusion of additional data and there may be an opportunity to improve it through a contract with originators of the data (the Galiano Conservancy Association).

The objectives, guidelines and exemptions for this DPA should be revised to include the requirements of the RAR. Model RAR DPA provisions are attached; these were developed for the Mayne OCP, are intended to implement the RAR on streams subject to the RAR, and have been reviewed by legal counsel. Because the proposed Riparian DPA in the Galiano OCP would be intended to include both RAR and non-RAR designated water bodies, the model wording will be revised to include appropriate

guidelines from the existing DPA that would achieve the objectives for non-RAR designated watercourses. This would be incorporated in the next draft of the OCP (Draft 3).

2. Marine and Intertidal (DPA 2): This DPA is currently included in the OCP as the 'Shoreline' DPA along with the Riparian DPA provisions; the LTC has previously reviewed this and directed that it be retained as a separate DPA and be re-named as the 'Marine and Intertidal' DPA. The reformatted DPA will be included in the next draft of the OCP (Draft 3). The current DPA is not ideal for managing development on the foreshore, intertidal and nearshore areas: staff have identified issues with the effectiveness of the current wording in the past. However, wholesale creation of new DPA for shoreline areas is not recommended for two reasons. First, given the limited time and scope of the OCP review, development of a new comprehensive shoreline DPA may delay the overall bylaw. Second, in the 2011-12 budget year, Trust Council will be considering funding for two initiatives that would support future development of a comprehensive shoreline DPA for all LTAs: (1) a proposed *Green Shores for Homes* project that would involve the Islands Trust engaging in a program for the protection and improvement of coastal ecosystem function and climate change adaptation; (2) Trust-wide adoption of an integrated shoreline and watershed protection approach for OCP processes. This latter project is being piloted on Thetis this year, with extension to the Trust area anticipated to follow. Because of this, I would recommend that the LTC to retain the existing DPA, with some minor revisions, in the next draft of the OCP and anticipate that a comprehensive new shoreline DPA would be developed as a future project, based on the Trust-wide initiatives, and subsequently incorporated as an amendment into the OCP.
3. Tree Cutting and Removal DPA (DPA 3): the LTC previously reviewed this this DPA and decided that the DPA should be retained and that carbon storage references be added to the justification. This will be included in draft 3 with these minor revisions to address climate change.
4. Elevated Groundwater Catchment Areas (DPA 4): the LTC agreed previously that this DPA be retained. This will be incorporated into draft 3 without substantive changes. The justification for the designation would be expanded to include a new authority in the Local Government Act specifically allowing for DPA for water conservation. There may be opportunity to revise the provisions of the DPA based on the recommendations of the groundwater study currently commencing.
5. Proposed new Sensitive Ecosystems DPA (DPA 5): At the special meeting of May 31st, the LTC requested staff to prepare background material for the LTC, including mapping, presenting options for DPA designations, and discussing issues associated with implementing a sensitive ecosystem DPA. Since that meeting, staff have requested the Ecosystem Protection Specialist to provide a comparison of the two most recent sensitive ecosystem mapping projects on Galiano:
 - a. The Sensitive Ecosystem Mapping (SEM) project, which was completed earlier this year, with some revisions still underway. This was a Trust Area-wide project

initiated to support the Trust Fund Board's Regional Conservation Plan and secondarily to provide mapping that could support local planning initiatives, including designation of DPAs. An earlier version of the SEM, based on Parks Canada data was used to support DPA designations in the North Pender OCP and draft DPA for the Mayne OCP. The mapping used for these two islands is at a finer scale than the current SEM.

- b. Islands Trust Ecosystem Mapping (ITEM): this mapping initiative was completed in 2004 and was also a Trust-wide mapping project prepared to support the TFB's first Regional Conservation Plan. At the time, this mapping was deemed to be at too large a scale to support local planning initiatives such as designation of DPA. However, the work for ITEM on Galiano was contracted to the Galiano Island Conservancy, and was at a much finer scale than elsewhere in the Trust Area.

Because of the availability of the smaller-scale ITEM for Galiano, the Ecosystem Protection Specialist was requested to compare the two projects with a view to implementation of a DPA (please see the attached memo for the review and discussion). The conclusion of the comparison is that the Galiano ITEM is preferable because of the finer scale, its capture of smaller ecosystems, and its better mapping of modified areas. From a DPA implementation point of view, the fact that ITEM does not include secondary and tertiary ecosystem classifications improves the understanding of the mapping for planners, trustees, landowners, and other non-specialists. The principal drawback of using the ITEM as the basis for a DPA is the date of the air photos (1998 and 2002). However, this could be addressed by updating the mapping using newly acquired 2009 air photos. We believe that this could be done relatively quickly and within the existing 2009-10 OCP budget by contracting with the Galiano Conservancy Association to update the product originally produced by the GCA. If the ITEM mapping can in fact be updated within the current fiscal year, my recommendation would be to use the ITEM as the basis for designation of the Sensitive Ecosystem DPA. The current ITEM mapping would be used for discussion purposes and in the next draft, with the updated version incorporated into the draft prior to First Reading.

Model Sensitive Ecosystem DPA provisions were developed several years ago in anticipation of the SEM project. Modified versions of these have been included in the North Pender OCP and are currently in draft form for inclusion in the Mayne OCP. The attached model DPA provisions are based on the Mayne draft. The sensitive ecosystem classes identified in the attached version are the SEM classes, some of the ITEM classes have different names; if the LTC supports proceeding with a Sensitive Ecosystem DPA based on the ITEM, the wording would be modified with incorporation into the third Draft of the OCP.

6. Proposed new Commercial and Industrial Form and Character DPA (DPA 6): The Galiano OCP does not currently include designation of a development permit area for the form and character of commercial or industrial development. This type of DPA is one of the older and more commonly utilized designations and is essentially a mechanism for general design control of non-residential development. It would allow for guidelines to

require that new commercial development include certain general design elements: the form the building (e.g. pitched roofs, massing), the character of the development (e.g. use of natural materials), building layout, lighting, parking layout, and landscaping. Similarly, for new industrial development, the DPA would control the design and layout, mainly with the objective of minimizing impacts on adjacent properties. Form and character DPA have been adopted in the North Pender and Mayne OCPs recently, and a model based on these is attached. This model would be further revised to include guidelines that would address minor additions and exterior changes to existing buildings (this has been identified as an issue through implementation) and incorporated into the next draft of the OCP. The designation of this DPA would simply be extended to all lands in the commercial and industrial land use designations.

Proposed new Steep Slope Hazard DPA (DPA 7): the LTC has previously received and reviewed the final report and recommendations of the consultant retained to provide an assessment of hazardous lands (April 21, 2010 LTC meeting). At that meeting the LTC directed staff to: “draft Development Permit Area provisions based on the steep slope hazard mapping and recommendations of the Shane Moore, C.N. Ryzuk and Associates report dated March 31, 2010”.

The report identified three slope hazard classes:

- Low Hazard Areas (15 to 22.5 degrees slope): areas of low to moderate slope which may be subject to limited geohazard and slope failure under extremely adverse conditions having a relatively low probability of occurrence, such as a high magnitude earthquake.
- Moderate Hazard Areas (22.5 to 45 degrees of slope): areas considered as possible hazard areas that may exhibit a geologic risk.
- High Hazard Areas (greater than 45 degree slope): geologic processes in this area result in hazards to development relatively regularly, and can be unpredictable. These areas should be considered to be at a high probability of failure at some point in time.

The report made a number of recommendations relating to assessment of land development within the three hazard classifications:

- a) Land development within **Low Hazard** areas is unlikely to have significant implications; consequently the report recommended that a development permit area designation would not be necessary for lands in this class.
- b) Land development within **Moderate Hazard** areas that involves extensive land clearing, construction of retaining structures greater than 1.2 metres in height, blasting, and excavation and placement of fill exceeding 0.5 metres in vertical thickness should be professionally assessed.

- c) Any land development within **High Hazard** areas that results in ground disturbance should be professionally assessed. In addition to the activities discussed in the Moderate Hazard Area recommendations, this would extend to all driveway construction, septic field installation, and tree removal.

The report noted a lack of consensus in the literature with respect to the impact of land clearing and tree removal on geohazards without doing a site-specific assessment. It identified 'localized tree removal' within the moderate slope class as an activity which would not create a potential hazard, but the report did not provide any specific recommendations based on the literature. The issue of the specific determination of permitted tree and vegetation removal in the moderate hazard slope class was discussed further with the consultant, who was able to provide the following comments:

- Removal of low vegetation would not, based on his knowledge, result in a geotechnical concern.
- Removing some trees would not result in a concern, except upslope of an existing structure where there may be existing potential for movement
- A safe number of trees that could be removed is difficult to determine, and would be dependant upon the slope, the size of the tree and whether the stumps are removed
- He would consider that removing 5 trees or less in a 10 metre radius is unlikely to cause concern within this slope class.

In summary, the report recommends that:

- In the **High Hazard Areas**, a development permit should be required for any land alteration or vegetation removal that does not require a building permit or for which an exemption letter cannot be provided by a geo-technical professional.
- In the **Moderate Hazard Areas**, major land alteration such as extensive tree removal or significant cut and fill should require a development permit where the work is not subject to a building permit or a geo-technical professional cannot provide an outright exemption letter.

The report recommendations are similar to those provided for North Pender and a draft DPA has been developed for the North Pender OCP based on the consultant's recommendations. A version of this model DPA is attached and would provide for professional assessments of all land alteration not subject to building permit or subdivision in the high hazard class areas, and significant activities, including removal of more than 5 trees per year, per lot, in the moderate class slope.

The exemptions are drafted to ensure that tree removal that would have the potential to cause a slope instability hazard are professionally assessed, while vegetation removal in the moderate slope class that would not be considered to cause a potential hazard to development is exempted.

In both slope classes, where a professional assessment recommends that the work should only proceed subject to conditions, a development permit would be required. The permit would be drafted to incorporate the recommendations of the geo-technical professional as conditions.

A draft development permit area map will be prepared based on the recommendations of the consultant's report. It would designate the 'Moderate' and 'High' hazard slope classes as a DPA (but not include the 'Low' hazard slope class) for the protection of development from hazardous conditions. Not designated within the DPA would be lands that are parks or protected areas, and lands within the highway dedication. These lands would fall outside the jurisdiction of the LTC or, in the case of protected areas, no development or significant land alteration would be anticipated.

Next Steps

If the LTC is satisfied with proceeding with the proposed DPA designations and provisions as outlined above, direction should be given to staff to include these in the next draft of the OCP (Draft 3). The revisions noted above, DPA maps, formatting, and re-organization for consistency will also be incorporated in that draft.

Recommendations:

1. THAT the Galiano Island Local Trust Committee direct staff to make the following revisions to Development Permit Areas (Section V) of the draft OCP:
 - a. The Riparian DPA be revised to incorporate the model RAR DPA provisions attached to the staff report of October 20, 2010 and that the Riparian DPA mapping be updated if feasible.
 - b. The Marine and Intertidal, Tree Cutting and Removal, and Elevated Groundwater Catchment DPAs be retained with minor revisions.
 - c. A new Sensitive Ecosystem DPA be included with designation based on the ITEM mapping, that the ITEM mapping be updated if feasible, and incorporating the model Sensitive Ecosystem DPA provisions attached to the staff report of October 20, 2010.
 - d. A new Commercial Form and Character DPA be included incorporating the draft provisions attached to the staff report of October 20, 2010.
 - e. A new Steep Slope Hazard DPA be included incorporating the draft provisions attached to the staff report of October 20, 2010.

Respectfully submitted by:



Robert Kojima

October 20, 2010

Date

Attachments: Staff Memo – Kate Emmings (October 13, 2010)
Model DPA provisions:
Riparian Area Regulation Implementation DPA
Sensitive Ecosystem DPA
Commercial and Industrial Form and Character DPA
Steep Slope Hazard DPA

Comparison of Sensitive Ecosystem Mapping (SEM) and the Islands Trust Ecosystem Mapping (ITEM) for Galiano Island

Prepared by: Kate Emmings, Ecosystem Protection Specialist
Islands Trust Fund
October 13, 2010

Background

Robert Kojima, Island Planner, has requested a comparison between the Islands Trust Sensitive Ecosystem Mapping (SEM) and the Islands Trust Ecosystem Mapping (ITEM) for Galiano Island. The information provided will be used to determine which dataset may be used for the Galiano Island Official Community Plan and possible Environmental Development Permit Area (EDPA) designations.

Important Note: ITEM data for Galiano Island was completed by the Galiano Conservancy Association in consultation with Islands Trust which was creating ITEM for the rest of its region in 2003/2004. Consequently, the Galiano data, while adhering to the same standards as ITEM, was done to a finer scale than the rest of ITEM and, unlike the rest of the ITEM dataset, involved site inspections (groundtruthing). Therefore, information and recommendations in this report is not transferable to other islands.

Mapping Summary

The details of the SEM and ITEM mapping products are shown below in Table 1. The major differences between the mapping are as follows:

1. Scale

The ITEM mapping was done to a much finer scale than the Sensitive Ecosystem Mapping, resulting in more numerous and smaller polygons. Scale is especially visible when defining home sites as shown in the mapping below of the Ganner Drive neighbourhood. It is also helpful in locating smaller habitats like wetlands and herbaceous areas.

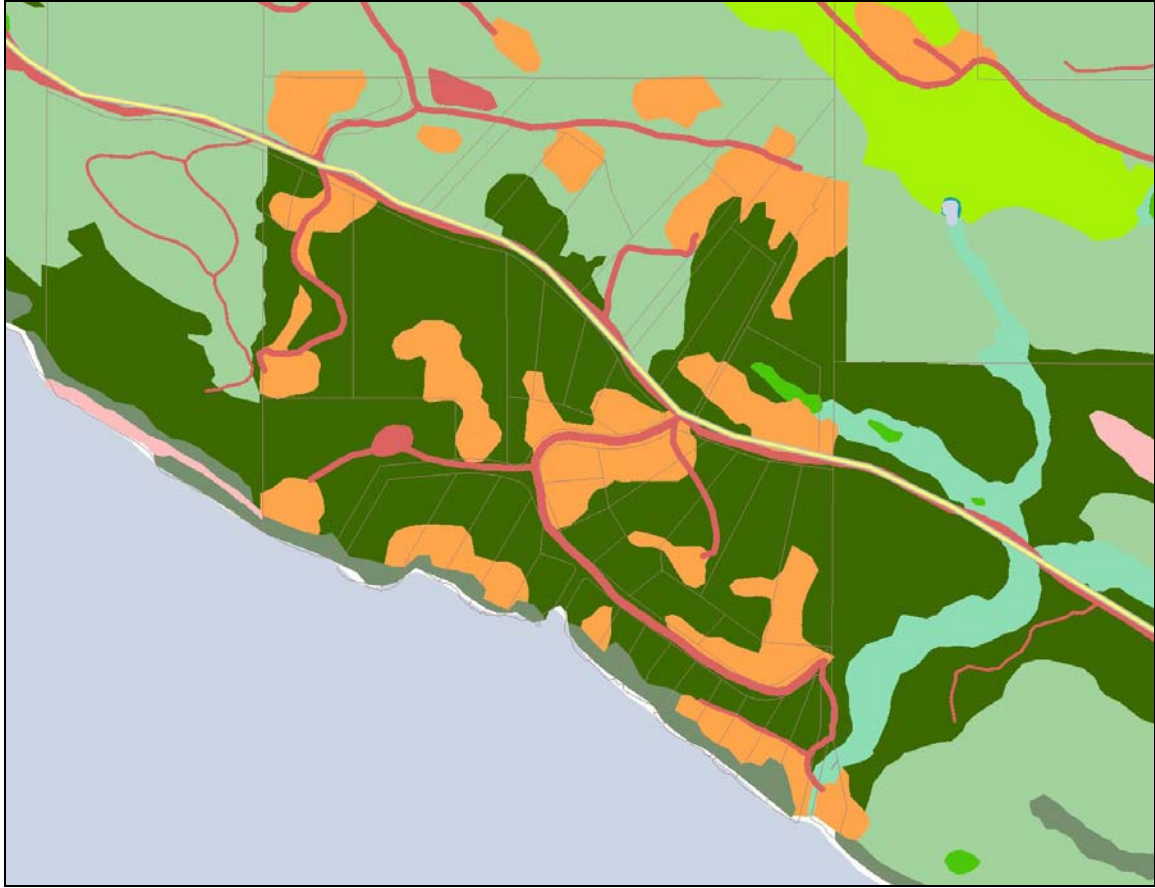


Figure 1. Ganner Drive neighbourhood in ITEM (orange indicates home sites)



Figure 2. Ganner Drive neighbourhood in SEM (homesites are incorporated with natural ecosystems within SEM polygons, see explanation in item 3 below)

2. Groundtruthing

ITEM had significantly more field inspections than SEM for Galiano (25% vs 10%).

3. Mapping Standard

SEM was produced using Terrestrial Ecosystem Mapping which conforms to a provincial standard (see table 1 below) and includes both vegetation and terrain information. The ITEM mapping classification, because of mapping costs, was a simplified form of TEM mixed with Sensitive Ecosystems Inventory (SEI) Standards and only had a vegetation component (i.e. no terrain component was mapped). The SEM mapping standard allows for up to three levels of ecosystem interpretation. These levels of interpretation help to capture details that might otherwise be lost because of mapping scale. Consequently, one mapped area can have up to 3 different mapping components. The SEM mapping has captured this by using hache marks on maps (see figure 2 above and figure 3 below). The ITEM mapping, because of its finer scale, was better able to divide out the ecosystem components (see figure 1 above and figure 4 below).

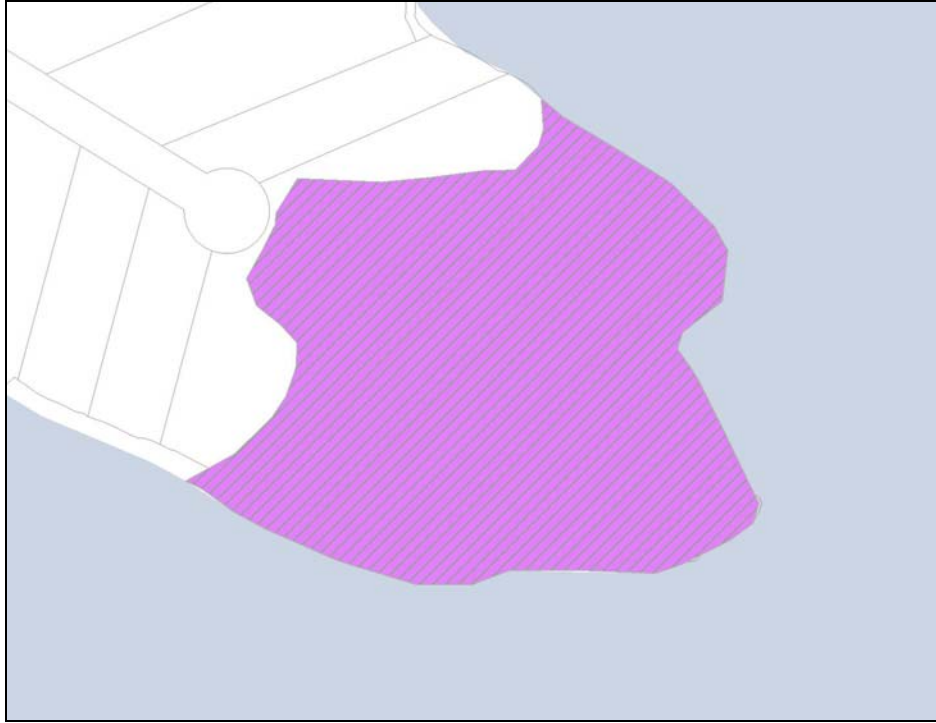


Figure 3. Bellhouse Park SEM mapping indicating one mapped area with a primary herbaceous component and a secondary woodland component



Figure 4. Bellhouse Park ITEM mapping indicating three separate mapped areas: Mature Forest, Woodland and Herbaceous.

Additional differences in the data captured include better defined wetland, cliff and woodland ecosystems within the ITEM dataset; however, at risk ecosystems, such as the Douglas-fir – Arbutus Ecosystem, which are mapped as Woodland in the SEM mapping, are not captured in the ITEM mapping if the canopy cover is more than 25%.

4. Information Used

The SEM and ITEM mapping used comparable information; however, the ITEM also used MacMillan Bloedel forest cover maps which indicate dates of timber harvest. Therefore, for old forestry lands, forest age class is likely to be more accurately mapped in ITEM.

5. Public Process

The public process for SEM was done more recently, but the ITEM public process for Galiano was better attended and more extensive (see table one below).

Table 1. Comparison of Sensitive Ecosystem Mapping (SEM) to Islands Trust Ecosystem Mapping (ITEM)

Information Type	Sensitive Ecosystem Mapping (SEM)	Islands Trust Ecosystem Mapping (ITEM)
Scale of mapping	1:16,000	1:5,000 although specific areas of the island have been classified at a larger scale with greater detail and adapted according to the classification scheme used for this project.
Year of air photos and scale	2005, 1:16,500 scale	1998 (colour), 1:15,000 scale, 1m pixel resolution 2002 (black and white), 0.5 m pixel resolution
Method used	Interpreted from Terrestrial Ecosystem Mapping which was completed from air photo interpretation and groundtruthing	Air photo interpretation and groundtruthing
Standard used	Resources Information Standards Committee (RISC) <ul style="list-style-type: none"> • Established 1991 • Responsible for establishing standards for natural and cultural resources inventories, including collection, storage, analysis, interpretation and reporting of inventory data 	Standard developed with assistance of BC Ministry of Environment and the BC Conservation Data Centre and the classification scheme was loosely based on the Sensitive Ecosystems Inventory classes and Terrestrial Ecosystem Mapping (TEM) Standards
Level of groundtruthing	57 plots (10% overall) <ul style="list-style-type: none"> • 3 full (0.5%) • 11 ground inspections (1.95%) • 43 visual (7.6%) 	25% overall <ul style="list-style-type: none"> • over 6.25 % ground inspections • remainder (~18.75%) visual inspections

Quality control	Formal process according to RISC standards (see above) Ministry of Environment (Corey Erwin, Terrestrial Ecosystems Ecologist)	Not formal Quality control conducted by Galiano Conservancy Board and enhanced by public process (see below)
Consultant background	Madrone Environmental Services Ltd. <ul style="list-style-type: none"> • Consulting firm established in 1988, based in Duncan, BC • Mapping done by ecosystem and bioterrain specialists • Company has long-time experience with Ecosystem Mapping and provincial standards 	Galiano Conservancy Association <ul style="list-style-type: none"> • Non-profit land trust established in 1989 • Mapping done by biologist with a degree in Natural Resource Conservation • Mapper was a resident of Galiano with local knowledge of the area
Polygon size	All mapped polygons are greater than or equal to 0.42 ha	All mapped polygons are greater than or equal to 0.01 hectares in area.
Other data used to inform mapping	<ul style="list-style-type: none"> • Terrain Resource Inventory Mapping (TRIM) • Satellite imagery • Digital Elevation Models • Sensitive Ecosystems Inventory (SEI) • Rare element occurrences (BC Conservation Data Centre) 	<ul style="list-style-type: none"> • 1997 black and white aerial photography (flown at 1:10,000 scale) • July 30th, 2000 Landsat 7 ETM+ satellite imagery • Forest Cover and Road maps – 1:20,000 scale (MacMillan Bloedel, 1987) • Forest Management Plan for LOT 8, Galiano Island (H.A. Forest Management LTD, 1992) • Forest Management Plan for LOT 51, Galiano Island (H.A. Forest Management LTD, 1992) • Galiano Stream and Wetland Project (Galiano Conservancy Association, 1999-2001) • Galiano Forest Restoration Project (Galiano Conservancy Association, 2001) • Laughlin Lake Management Plan (Galiano Conservancy Association, 2002) • Pebble Beach Reserve Management Plan (Galiano Conservancy Association, 1998) • Base Line Inventory, District

		Lot 44 (Galiano Conservancy Association, 2002) <ul style="list-style-type: none"> • Sensitive Ecosystems Inventory (Environment Canada/BC Conservation Data Centre, 1992-97) • Terrain Resource Information Management Program (TRIM) road and contour data (Province of British Columbia, Ministry of Environment Lands and Parks, Geographic Data BC, 1997)
Public Process	1 Open House Nov 2009, approx 25 in attendance 15 comments received Galiano Conservancy Association comments provided	3 Open Houses Nov 2003, 135 attended 5 themed workshops, 2003/04, over 100 in attendance

Discussion

Because of the combined nature of the polygons (mapped areas) in the SEM mapping, sensitive ecosystems are often combined with developed areas. The combination of these features in the SEM mapping has been an issue on other islands implementing EDPAs because areas that are already developed are sometimes grouped with areas of sensitivity. Creating EDPAs in these areas can create a burden for landowners who are then responsible for proving that their land lacks a sensitive ecosystem. Conversely, because of the scale of the SEM mapping, details like small sensitive ecosystems (e.g. small wetlands) are often lost and areas that should be EDPAs are not mapped. Therefore, for the purposes of EDPAs, it would be preferable to use ITEM for Galiano because it has been done to a much finer scale, captures many small sensitive ecosystems, and will help to exclude areas that are likely not sensitive. To ensure that the information captured in the SEM mapping product is not lost and to bring mapping up-to-date, it would be preferable to have a mapper update the ITEM classification for Galiano using 2009 air photos (recently acquired) and the Terrestrial Ecosystem Mapping dataset which was used to create SEM. Because this mapping would constitute an update and not a new product, it could likely be done inexpensively if a mapper who is familiar with the island and the original mapping is used. Estimated cost would be between \$5,000 and \$10,000 to update the Sensitive Ecosystems, including better mapping of streams and wetlands.

RIPARIAN DEVELOPMENT PERMIT AREA

Designation

This development permit area includes all land designated on Schedule XX of this plan as being within the Riparian DPA. This DPA includes the riparian assessment areas related to the watercourses and water bodies identified on Schedule XX, consisting of the stream and:

1. for a stream, a 30 metre strip on both sides of the stream measured from the high water mark;
2. for a ravine less than 60 metres wide, a strip on both sides of the stream measured from the high water mark to a point that is 30 metres beyond the top of the ravine bank; and
3. for a ravine 60 metres wide or greater, a strip on both sides of the stream measured from the high water mark to a point that is 10 metres beyond the top of the ravine bank; and
4. for all other water bodies, an area encompassing the water body and 30 metres around the water body measured from the natural boundary of the water body.

and Schedule XX shall be so interpreted. The designation and delineation of Development Permit Area XX consists of a digital record stored and maintained in a Geographic Information System (GIS) at the offices of the Islands Trust. The actual location of the streams, water bodies and the DPA may need to be determined on a site-specific basis by a qualified environmental professional or a surveyor. The actual location of the streams, water bodies and the DPA may need to be determined on a site-specific basis by a qualified environmental professional or a surveyor.

Authority

This development permit area is established, pursuant to Section 919.1(1)(a) of the *Local Government Act*, for the protection of the natural environment, its ecosystems and biological diversity.

Terms used in this section that are defined in the Riparian Areas Regulation (RAR) are intended to be interpreted in accordance with the definition given in the Regulation, as it may be amended from time to time.

Special Conditions and Objectives that Justify the Designation

It is the Object of the Islands Trust to “Preserve and protect the Trust Area and its unique amenities and environment of the Trust Area for the benefit of the residents of the Trust Area, and of British Columbia generally, in cooperation with

municipalities, regional districts, improvement districts, other persons and organizations and the government of British Columbia.”

It is a policy of the Islands Trust Council that local trust committees shall in their official community plans and regulatory bylaws, address means to prevent further loss or degradation of freshwater bodies or water courses, wetlands or riparian zones and to protect aquatic wildlife.

Furthermore, the province of British Columbia's *Fish Protection Act*, requires that local governments establish regulations to protect riparian areas. The reason for this designation is to protect riparian areas from development so that the areas can provide natural features, functions and conditions that support fish life processes.

Development Approval Information

The Riparian DPA is designated as an area for which development approval information may be required as authorized by Section 920.01 of the *Local Government Act*. Development approval information in the form of a report from a qualified environmental professional (QEP) may be required due to the special conditions and objectives described above.

Application Requirements

The applicant must, in addition to any other application requirements enacted or imposed by the Local Trust Committee, provide at their expense an assessment report from a Qualified Environmental Professional (QEP) which has been reviewed and approved by the Ministry of Environment.

Applicability

The following activities shall require a development permit whenever they occur within the DPA, unless specifically exempted below:

- a) removal, alteration, disruption, or destruction of vegetation;
- b) disturbance of soils;
- c) construction or erection of buildings and structures;
- d) creation of non-structural impervious or semi-impervious surfaces;
- e) construction of flood protection works;
- f) construction of roads, trails, docks, floats, ramps and bridges;
- g) provision and maintenance of residential sewer and water services;
- h) development of residential drainage systems;
- i) development of residential utility corridors;
- j) subdivision as defined in section 872 of the *Local Government Act*.

A separate development permit, or additional development permit conditions in a single permit, may be required or imposed if the development is occurring in another development permit area designated in this plan.

Exemptions

The following activities are exempt from any requirement for a development permit:

- a) development where an assessment report prepared by a qualified environmental professional provides an unqualified certification that if the development is implemented as proposed there will be no harmful alteration, disruption or destruction of natural features, functions and conditions that support fish life processes in the riparian assessment area;
- b) the reconstruction, repair or maintenance of a pre-existing permanent structure on its existing foundation.
- c) for certainty, all uses that are not residential, commercial or industrial or accessory to such a use;
- d) the removal of trees that have been examined by an arborist and certified to pose an immediate threat to life or property;
- e) gardening and yard maintenance activities within an existing landscaped area, including mowing, pruning, planting and minor soil disturbance that does not alter the general contours of the land;
- f) the construction of a fence if no native trees are removed and the disturbance of native vegetation is restricted to 0.5 metres on either side of the fence;
- g) the construction of a trail if all of the following apply:
 - the trail is 1 metre wide or less;
 - no native trees are removed;
 - the surface of the trail is pervious;
 - the trail is designed to prevent soil erosion where slopes occur; and
 - where the trail parallels the stream or waterbody, the trail is more than 5 metres away from the high water mark;
- h) ecological restoration and enhancement projects undertaken or authorized by a public body;
- i) work that is authorized by Fisheries and Oceans Canada by permit under section 35 of the *Fisheries Act*;
- j) changes in or about a stream authorized under Section 9 of the *Water Act*;

Guidelines

Prior to undertaking any development activities within the Riparian DPA an owner of property shall apply to the LTC for a development permit, and the following guidelines apply:

- a) In general, all development in this DPA should be undertaken in a manner that minimizes impact on the riparian area and on aquatic ecosystems. Where a QEP has made recommendations for mitigation measures, enhancement or restoration in order to lessen impacts on the riparian area and aquatic ecosystems, the LTC may impose permit conditions, including a requirement for security in the form of an irrevocable letter of credit, to ensure the protection of riparian areas and aquatic ecosystems, consistent with the measures and recommendations described in the report.
- b) The development permit should not allow any development activities to take place within any Streamside Protection and Enhancement Area (SPEA) identified by the QEP, and the owner should be required to implement a plan for protecting the SPEA over the long term through measures that may be implemented as conditions of the development permit.
- c) Where the QEP report describes an area as suitable for development with special mitigating measures, the development permit should only allow the development to occur in compliance with the measures described in the report. Monitoring and regular reporting by a QEP at the applicant's expense may be required during construction and development phases, as specified in a development permit.
- d) If the nature of the proposed project in a riparian assessment area or the surface of a waterbody changes after the QEP report has been prepared such that it is reasonable to assume that the QEP's assessment of the impact of the development may be affected, the LTC may require the applicant to have the QEP update the assessment at the applicant's expense and DP conditions may be revised accordingly.
- e) The LTC may consider variances to subdivision or siting or size regulations where the variance may result in enhanced protection of a riparian assessment area or aquatic ecosystem in compliance with recommendations of a QEP report.

Development Permit Area for the Protection of Sensitive Ecosystems

Designation

All lands shown on Schedule XX as being a sensitive ecosystem are designated as a development permit area. The Sensitive Ecosystem development permit area includes portions of the sensitive ecosystems identified on the _____ Mapping () for Galiano Island.

Authority

The Sensitive Ecosystem development permit area is established, pursuant to Section 919.1(1)(a) of the *Local Government Act*, for the protection of the natural environment, its ecosystems and biological diversity. In considering the issuance of a development permit, the LTC should be satisfied that the guidelines of the DPA have been met where applicable and may impose conditions where appropriate.

Special Conditions or Objectives that Justify the Designation

The objective of this development permit area is to preserve and protect remaining sensitive ecosystems on Galiano Island.

It is the Object of the Islands Trust to “Preserve and protect the Trust Area and its unique amenities and environment of the Trust Area for the benefit of the residents of the Trust Area, and of British Columbia generally, in cooperation with municipalities, regional districts, improvement districts, other persons and organizations and the government of British Columbia.”

It is policy of the Islands Trust Council that local trust committees shall in their Official Community Plans and regulatory bylaws, address the identification and protection of the environmentally sensitive areas and significant natural sites, features and landforms in their planning area and, address the planning, establishment, and maintenance of a network of protected areas that preserve the representative ecosystems of their planning area and maintain their ecological integrity.

The sensitive ecosystem mapping is at a scale of 1:XX,000 and is based on air photos flown in XXX. The mapping was themed using Terrestrial Ecosystem Mapping (TEM) standards consistent with the Resource Information Standards Committee (RISC) Standard for Mapping Ecosystems at Risk in BC. The Sensitive Ecosystem Mapping for Galiano Island consists of a digital record compiled by means of a geographic information system maintained at the offices of the Islands Trust. A generalized copy of the Sensitive Ecosystems Map is partially reproduced as Schedule XX of this OCP.

This DPA includes lands identified as containing the following sensitive ecosystems:

- Woodland Ecosystems, one of the most threatened ecosystems in the region and are nationally, provincially, and regionally rare. Woodland Ecosystems are open deciduous forests, composed of pure or mixed stands of Garry oak or mixed stand of arbutus and Douglas- fir; mature big-leaf maple can also be found in sites designated as woodland. Woodlands may include non-forested openings,

often with shallow soils and bedrock outcroppings. The diverse physical structure of woodland stands (snags, rotten limbs, and logs) increases the range of habitat niches available to different species. A rich assemblage of plants, insects, reptiles and birds are drawn to these ecosystems due to the food sources, habitat and proximity to the ocean. Garry oak woodlands support the highest plant species diversity of any terrestrial ecosystem in British Columbia and have been particularly affected by development, fragmentation, and invasive species. It has been estimated that only 5% of the historic Garry oak woodlands in B.C. remain.

- Herbaceous Ecosystems are very rare, comprising the island's open wildflower meadows and grassy hilltops, and are usually interspersed with moss-covered rock outcrops. They typically occur as small openings in forested areas with gentle to moderate slopes not exceeding 30% grades. They are located from the salt spray zone near shorelines to the summits of local hills. Herbaceous ecosystems are characterized by thin soils which are easily disturbed and attractive to development and recreational uses.
- Riparian ecosystems support a high concentration of vascular plants, mosses, amphibians and small mammal species. Riparian areas function as natural water storage and purifying systems for improved water quality and provide safe corridors for wildlife movement. The riparian areas need to be large enough to protect habitat, prevent flooding, control erosion, reduce sedimentation and recharge groundwater.
- Wetland ecosystems include areas on the island that are characteristically wet or contain saturated soils and are dominated by water-loving plants. Classes of wetlands include swamps, marshes, bogs, fens, wet meadows, estuaries and similar shallow water areas that are not part of an active floodplain or stream. Wetlands provide a specialized habitat for diverse and unique species, and are a vital link between upland and open water aquatic environment. They are cherished for their diversity of life and as opportunities for recreational activities and eco-tourism. Wetland ecosystems are sensitive and important because they exhibit rarity, high biodiversity, fragility, specialized habitat, specialized functions and connectivity. Wetland ecosystems are rare in the Trust Area. Over the past 150 years, wetlands have declined due to agricultural development, flood control, forestry, and residential development.
- Cliff ecosystems consist of the island's steep, vertical or overhanging rock faces where sparse vegetation may occur in crevices or on ledges. Although rocky outcrops, shorelines, and cliffs are generally robust and stable, the shallow soils are especially susceptible to erosion, damage from recreational activities, and other human disturbances. Open ledges and horizontal fissures on cliffs are known to provide nesting sites for birds such as the blue listed Turkey Vulture or the red listed 'Anatum' Peregrine Falcon. Cliff crevices are used for roosting by bats, and the open cliff faces are used for foraging. Deep crevices are used for shelter and overwintering of snakes and lizards.

Development Approval Information

The Sensitive Ecosystem development permit area is designated as an area for which development approval information may be required as authorized by Section 920.01 of the *Local Government Act*. Development approval information in the form of a report from a qualified professional may be required due to the special conditions and objectives described above.

General Applicability

The following activities shall require a development permit whenever they occur within The Sensitive Ecosystem development permit area, unless specifically exempted below.

- a) Subdivision of land.
- b) Construction of, addition to or alteration of a building or other structure.
- c) Alteration of land.

Development Permit Exemptions

The following activities are exempt from any requirement for a development permit. Despite these exemption provisions, owners must satisfy themselves that they meet any other applicable local, provincial or federal requirements:

- a) submission to the Islands Trust of a written statement from a registered professional biologist with relevant experience certifying the absence of a sensitive ecosystem within the area that would be affected by the proposed work;
- b) determination by Islands Trust staff that the land subject to the proposed work does not contain a sensitive ecosystem;
- c) the placement of impermanent structures, such as benches, tables and garden ornaments;
- d) agricultural activities conducted in a manner consistent with normal farm practices as defined in the *Farm Practices Protection (Right to Farm) Act*;
- e) gardening and yard maintenance activities within an existing landscaped area, including mowing, pruning, planting and minor soil disturbance that does not alter the general contours of the land;
- f) planting of indigenous vegetation characteristic of the sensitive ecosystem;
- g) the construction of a fence if no native trees are removed and the disturbance of native vegetation is restricted to 0.5 metres on either side of the fence;
- h) the construction of a trail if all of the following apply:
 - the trail is 1 metre wide or less;
 - no native trees are removed;
 - the surface of the trail is pervious;
 - the trail is designed to prevent soil erosion where slopes occur; and
 - where the trail parallels a stream, the trail is more than 5 metres away from the high water mark of the stream.
- i) ecological restoration and enhancement projects undertaken or authorized by a public body;
- j) the reconstruction, repair or maintenance of a pre-existing permanent structure on its existing foundation;
- k) the removal of trees that have been examined by an arborist and certified to pose an immediate threat to life or property;

- l) the removal of invasive, non-indigenous trees or vegetation;
- m) the repair and maintenance of existing roads, driveways, paths and trails, provided there is no expansion of the width or length of the road, driveway, path or trail, and no creation of additional impervious surfacing, including paving, asphaltting or similar surfacing;
- n) lands within the Nature Protection (NP) zone; or
- o) land where a conservation covenant under section 219 of the Land Title Act is registered against title, is granted to the Trust Fund Board or a recognized conservancy and includes provisions which protect sensitive ecosystems in a manner consistent with the applicable DPA guidelines.

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Sensitive Ecosystem Development Permit Area Guidelines

1. Development should avoid being located in areas containing important, rare or fragile sensitive ecosystems or habitat where reasonable alternative sites exist.
2. The area cleared and disturbed for development should be minimized.
3. Large, connected undisturbed areas should be retained, with connections and corridors providing continuity between sensitive ecosystems and important habitat
4. Buildings and associated infrastructure should be sited to allow sufficient undisturbed space around significant mature or established trees to protect root systems.
5. Undeveloped buffer areas should be retained around sensitive ecosystems, features or habitat where feasible. Buffer areas should be of sufficient width to limit access by invasive plants.
6. Natural features may be retained through incorporation into the design of the development. In particular, unique or special natural features such as native grasses, rare plants, unique land forms, rock outcroppings, mature trees, spits and dunes should be protected.
7. Native grasses, rare plants, and wildflower ecosystems and associated soils should be preserved.
8. The planting or introduction of non-native plants should be avoided and the use of drought resistant and native plants in landscaping should be encouraged.
9. Removal of mature and old trees, dead and declining trees and the root systems of trees should be avoided.
10. Denning and nesting sites of rare, threatened or endangered species should be protected.
11. Soil removal and deposit should be minimized.
12. Alteration of natural drainage systems in ways that increase or decrease the amount of water available to a sensitive ecosystem should be avoided.
13. Septic fields should be located in a manner that minimizes potential impacts on sensitive ecosystems or habitat.
14. Driveways and other accesses should be limited to the number required for safe access, with shared driveway access where feasible. Driveway lengths and widths should be limited to the minimum necessary. The use of impervious surfaces should be discouraged.
15. Shoreline structural modifications should be limited in number and extent to those necessary to support or protect an existing use or structure.

16. Preference should be given to shoreline modifications that have a minimal impact or enhance ecological functions, including vegetation enhancement, upland drainage control, beach enhancement or nourishment, anchor trees, or gravel placement. Harder construction measures should be avoided.
17. Shoreline stabilization should not interrupt natural processes solely to reduce erosion of undeveloped land. Vegetation which helps stabilise banks, reduce erosion and provides habitat should be retained or enhanced.
18. Stairs, walkways and other access within a sensitive ecosystem adjacent to the shoreline should be limited to that required for safe access, with shared access where feasible. Stairs should incorporate landings, follow the existing contours of the site, utilize small concrete pilings and have gaps between boards.
19. In addition to the other guidelines, the following guidelines apply specifically to applications within a woodland sensitive ecosystem:
 - a) Large mature and old trees, trees containing cavities, the root systems of trees, rare plant species, native grasses and associated under-storey vegetation should be protected.
 - b) Unnecessary removal of dead or declining trees, downed logs, snags and leaf litter should be avoided.
 - c) Where feasible, dangerous trees should be cut to a level where they are safe rather than removed entirely.
20. In addition to the other guidelines, the following specific guidelines apply to applications within a riparian ecosystem:
 - a) The filling or draining of permanent or seasonally wet areas should be avoided.
 - b) Locating roads, driveways and utility corridors through riparian ecosystems should be avoided; where crossings have to be located within the ecosystem the crossings should, to the extent feasible:
 - i) Be narrow and perpendicular to the riparian ecosystem;
 - ii) Share facilities;
 - iii) Minimize impacts on streams and other water bodies;
 - iv) Conform to topography to minimize cut and fill;
 - v) Not restrict natural movement of surface and groundwater;
 - c) The construction involving disturbance of soil should avoid direct run-off into watercourses.
 - d) Disruption of natural hydrologic cycles and aquatic processes, including stream flows, seasonal flooding, stream channel movements, or natural slope in water bodies should be avoided.

- e) Vegetation cover which helps stabilise banks, reduce erosion and provide habitat should be maintained.
 - f) Removal of vegetation that would reduce the natural functions of the sensitive ecosystem should be avoided.
21. In addition to the other guidelines, the following specific guidelines apply to applications within a wetland ecosystem:
- a) Filling or draining of permanent or seasonally wet areas should be avoided.
 - b) Wetland vegetation and structure should be retained.
 - c) Locating roads, driveways and utility corridors through wetland ecosystems should be avoided; where crossing have to be located within the ecosystem the crossing should, to the extent feasible:
 - i) Be narrow and perpendicular to a wetland ecosystem;
 - ii) Share facilities;
 - iii) Minimize impacts on water bodies;
 - iv) Conform to topography to minimize cut and fill;
 - v) Not restrict the natural movement of surface and groundwater;
 - d) The construction involving disturbance of soil should be conducted in such a manner as to avoid direct run-off into wetlands.
 - e) Disruption of natural hydrologic cycles and natural aquatic processes, including water flows, seasonal flooding, channel movements, windthrow or natural slope, should be avoided.
 - f) Vegetation cover which helps stabilise banks and reduce erosion and provides habitat should be maintained.
 - g) Removal of vegetation that would reduce the natural functions of the sensitive ecosystem should be avoided.
 - h) Alteration of vernal pools to create year-round water features should be avoided.
22. In addition to the other guidelines, the following specific guidelines apply to applications within a cliff ecosystem:
- a) Talus and rock debris that occurs at the base of rock outcroppings should be maintained.
 - b) The faces of rock outcrops and cliffs should be protected.
23. The following guidelines are applicable to any subdivision proposal within The Sensitive Ecosystem development permit area:

- a) Subdivisions should, where feasible, protect sensitive ecosystems and habitat by clustering lots in areas with disturbed or modified ecosystems.
 - b) Proposed lots containing sensitive ecosystems and habitats should be of sufficient size to accommodate the permitted level of development, including driveway access and septic disposal systems, while also avoiding alteration and fragmentation of the sensitive ecosystems and habitat.
 - c) Sensitive ecosystems and habitat should be protected from clearing, grading and filling during the land development and construction phases of subdivision. Permit conditions may include requirements for fencing, signs and timing of work.
 - d) Provision should be made for any recommended buffer areas adjacent to sensitive ecosystems and habitat.
 - e) Lots should be configured to minimize driveway lengths within sensitive ecosystems. The provision of shared driveways may be considered as a condition of a permit if it can reduce impacts on sensitive ecosystems and habitat.
 - f) A community water system, as an alternative to individual wells, may be considered as a condition of a permit where this would result in reduced impacts on sensitive ecosystems and habitat.
 - g) Septic disposal sites should be located in a manner that minimizes potential impacts on sensitive ecosystems and habitat.
 - h) Storm water management systems, where proposed, should be designed in a manner that avoids the impacts of run-off on sensitive ecosystems and habitat.
 - i) Where applicable, lots should be configured to allow the siting of docks and stairs to the foreshore with minimal impact on sensitive shoreline and intertidal areas.
 - j) Pre-designation of building sites, septic disposal fields and driveways may be considered as a condition of a permit where this would result in reduced impacts on sensitive ecosystems and habitat.
24. In general, where a professional's report describes an area as suitable for development with special mitigating measures, the development permit should only allow the development to occur in compliance with the measures described in the report. Conditions of a permit may include:
- a) the designation of areas within which no development shall occur;
 - b) requirements of building siting, size, design or construction that would minimize impacts, protect or enhance sensitive ecosystems or habitat;
 - c) use of native vegetation in landscaping;

- d) the use of pervious surfaces;
 - e) the placement of permanent or temporary fencing around sensitive features;
 - f) fencing, flagging and posting of notices during construction;
 - g) limits on blasting in sensitive areas;
 - h) limits on construction timing;
 - i) provision of works to maintain or restore the quantity or quality of water reaching environmentally sensitive areas or habitat;
 - j) restoration or enhancement of disturbed sensitive ecosystems and habitat;
 - k) the layout of lots, including clustering, driveways, access routes, and septic disposal facilities in a plan of subdivision.
25. Where restoration or enhancement work is required as a condition of a permit, the applicant may be required to provide to the Islands Trust a landscaping security deposit, in the form of an irrevocable letter of credit, equal to 125% of the estimated costs of all materials and labour, as determined by a professional with relevant experience.
26. The LTC may consider variances to subdivision or building siting or size regulations where the variance may result in protection of a sensitive ecosystem or habitat.

Development Permits to Define the Form and Character of Commercial, Visitor Accommodation and Industrial Development

Designation

This development permit area includes all land that is designated XXXXX.

Authority

This development permit area is established, pursuant to Section 919.1(1)(f) of the *Local Government Act*, for the purpose of establishing objectives for the form and character of commercial and industrial development.

Objectives

The objective of this development permit area is to ensure that new or additional commercial or industrial uses are developed in a manner that is consistent with and enhances rural island character and minimizes impacts on adjacent properties.

General Applicability

The following activities shall require a development permit whenever they occur within the DPA, unless specifically exempted below.

- (a) Construction of, addition to or alteration of a building or other structure.

Work Not Requiring a Permit (Exemptions)

The following activities are exempt from any requirement for a development permit:

- a) subdivision of land;
- b) the maintenance of existing landscaping;
- c) the repair or maintenance of existing buildings or structures, including lighting, parking, or signage, provided there is no addition to lot coverage or area, no exterior alterations requiring a building permit or no change in the use of external materials that results in the alteration to the form or character of the building or structure;
- d) internal renovations or alterations;
- e) construction of buildings or structures not requiring a building permit;
- f) repair and maintenance of existing roads, parking areas, paths and trails; and
- g) construction of unpaved driveways and walkways.

Guidelines

The intent of this development permit area is to ensure that development in the form of new buildings or structures, or major additions to buildings or structures, meets the objectives described above. In considering the issuance of a development permit, the LTC should be satisfied that the following guidelines have been met where applicable and impose conditions where appropriate:

- Guideline 1 Where an application involves retail commercial buildings or structures, which are buildings and structures designed and intended for commercial uses other than for visitor accommodation, the building form and character should adhere to the following guidelines:

- 1) Buildings and other structures should utilize existing topography and vegetation to be sited in a manner that is relatively unobtrusive and blends into the surrounding landscape.
- 2) Buildings should be designed and sited with the main entrance oriented to the front lot line or to the main point of entry from the road.
- 3) Building form and character should not overwhelm the scale, mass and character of adjacent non-commercial properties.
- 4) Building mass should be appropriately proportioned in comparison to building height by limiting building frontage length in relation to building height.
- 5) Building mass should be softened by the use of small-scale elements such as windows, panels, entrances and other detail features in order to avoid monotony in design.
- 6) Buildings should not be designed with blank walls presenting an aspect to the highway or to highly visible areas; features such as garage doors and windowless facades should be minimized.
- 7) Buildings giving the impression of strip development should not be considered.
- 8) Natural materials should be incorporated into the design of buildings with construction materials and styles relating to the vernacular style of coastal architecture.
- 9) Architectural variety should be provided through the use of pitched roofs, dormers and similar features.
- 10) New buildings should be sited in a manner that results in minimal disturbance to existing vegetation.
- 11) In order to reduce noise, elements such as roof top mechanical equipment, shipping and loading areas, exterior storage areas, transformers, and meters should be screened from public view as effectively as possible through the use of any combination of landscaping, solid fencing and building design.
- 12) Social gathering should be encouraged by creating spaces such as porches, patios and gardens that are visible and accessible.

Guideline 2 Where an application involves visitor accommodation buildings or structures, which are buildings designed and intended for use as commercial visitor accommodation units, building form and character should adhere to the following guidelines:

- 1) Buildings and structures should utilize existing topography and vegetation to be sited in a manner that is relatively unobtrusive and blends into the surrounding landscape.
- 2) Where there are significant numbers of visitor accommodation units proposed or permitted on a site, development should incorporate a

variety of building types, including attached or multi-unit buildings, in order to minimize the development footprint on the site and to minimize impacts on adjacent properties.

- 3) Building form and character should not overwhelm the scale, mass and character of adjacent non-commercial properties, without being imitative or derivative of adjacent dwellings.
- 4) Building mass should be limited to two storeys above grade.
- 5) Building mass should be appropriately proportioned in comparison to building height by limiting building frontage length in relation to building height.
- 6) Natural materials should be incorporated into the design of buildings with construction materials and styles relating to the vernacular style of coastal architecture.
- 7) Architectural variety should be provided through the use of pitched roofs, peaked roof lines, dormers and similar features.
- 8) New buildings should result in minimal disturbance to existing vegetation.
- 9) In order to reduce noise such elements as roof top mechanical equipment, shipping and loading areas, exterior storage areas, transformers, and meters should be screened from public view as effectively as possible through the use of any combination of landscaping, solid fencing, and building design.
- 10) Development along the shoreline should be visually unobtrusive and conform to the existing contours of the shoreline.
- 11) Development should be designed and sited in such a manner as to preserve existing significant views, public paths and view corridors from adjacent properties and public lands. Consideration should be given to siting a first storey below grade where it results in a lower profile building and protection of views.
- 12) Structures intended to access the foreshore, docks and marinas should be small-scale and low-profile. Stairs and ramps should follow the existing contours of the site, incorporate landings, public paths, utilize small concrete pilings and have gaps between boards.

Guideline 3 Where an application involves industrial buildings or structures, building form and character should adhere to the following guidelines:

- 1) Buildings and other structures should utilize existing topography and vegetation to be sited in a manner that is relatively unobtrusive and blends into the surrounding landscape.
- 2) Industrial buildings and structures should be functional and not include unnecessary design features or elements.
- 3) Buildings should be designed and sited to avoid creating visual and noise impacts from industrial operations and using material blending with the surrounding.

- 4) Elements such as roof top mechanical equipment, shipping and loading areas, external storage areas, transformers, and meters should be screened from public view as effectively as possible through the use of any combination of landscaping, solid fencing, and building design.

Guideline 4 All applications should include landscaping adhering to the following guidelines:

- 1) A landscape plan prepared by a professional such as a landscape architect should:
 - i. provide supporting documentary evidence pertaining to landscape specifications, irrigation requirements, planting lists (highlighting indigenous species), cost estimates, and the total value of the work;
 - ii. identify existing vegetation by type and identify areas which are to be cleared;
 - iii. provide for the landscape treatment of the frontage of the site which abuts onto existing or future public roads;
 - iv. provide for vegetative buffers along lot lines;
 - v. identify how landscape treatment will avoid the use of herbicides, pesticides and fungicides.
- 2) Existing site topography, landscape features, and indigenous vegetation should be retained wherever possible. Significant or important existing indigenous vegetation within all setback areas should be preserved (i.e. wetlands and mature wooded areas). Significant existing indigenous vegetation within the buildable area of the site should be preserved wherever possible through careful and innovative site design.
- 3) An adequate landscaped strip should be provided along all roads. The width and extent of this buffer strip should be established based on the overall useable site area of the parcel, the extent of existing vegetation, the provision for adequate access and visual clearances, and any zoning requirements for landscape screening.
- 4) Landscaped strips or appropriate buffering should be provided adjacent to the boundary of the Agricultural Land Reserve, along abutting residential properties and adjacent to watercourses.
- 5) Any storage areas on the property facing public roadways should have adequate landscape screening or the provision of other screening consistent with the overall character of the site and with the other guidelines in this section.
- 6) Proposed new plantings should consist of indigenous vegetation or other non-invasive vegetation suitable for local environmental conditions; buffer planting using massing of indigenous trees and shrubs is encouraged.
- 7) Appropriate planting should be used to soften building massing, to break up parking areas and to provide screening along lot lines. It is not intended that plantings form a full-height visual screen around the whole site and screen all buildings from view; planting should reduce and soften the apparent scale and mass of buildings, provide screens, and create breaks in a building façade or at building corners.

- 8) New drainage swales and detention basins should be planted with materials that will assist in the treatment of stormwater runoff and that are also complementary to the surrounding natural vegetation.
- 9) All landscaping and screening should be completed within 12 months of an occupancy permit being issued and should meet or exceed the British Columbia Society of Landscape Architects and British Columbia Nursery Trades Association standards.
- 10) The application may include a security, in the form of an irrevocable letter of credit for 125% of the value of the quoted landscaping cost.

Guideline 5 All applications should provide a parking layout plan, adhering to the following guidelines:

- 1) Large impervious and surfaced parking areas should be avoided. Parking should be provided through smaller parking areas dispersed throughout the development and separated with planted landscaped areas. Porous or permeable surfaces should be used where practical and impervious surfaces should be minimized and swales and open ditches should be installed rather than curb and gutter systems.
- 2) Visitor parking spaces should be clearly identified and provided within the development. Tree planting is encouraged in and around parking areas.
- 3) Parking should be located at the sides or rear of buildings wherever feasible.
- 4) Development should provide for and clearly identify pedestrian circulation areas, preferably with different paving and/or landscaping treatment.
- 5) All significant paved parking areas should be included within the context of any stormwater water plan and incorporate oil/water separators.
- 6) The shared use of a common access between businesses is encouraged. The number of accesses should be limited to the number required for traffic safety.
- 7) All new development should include provision for bicycle parking or storage.

Guideline 6 Lighting proposed as part of an application for a new building or overall site development should adhere to the following guidelines:

- 1) Lighting for walks and parking areas should be small in scale and used to illuminate signs, displays and pedestrian paths.
- 2) High intensity lighting in parking lots and along roadsides is discouraged.
- 3) Security and other lighting should not be placed so as to shine directly onto residential or agricultural properties or to reduce the effectiveness of any landscaped buffer.

Guideline 7 Signs should adhere to the following guidelines:

- 1) Each site should have no more than one freestanding sign, located on the same lot as the development.
- 2) One sign should be installed for each business premise. All signs should be integrated into the overall design of the building and should not extend above the top wall of a building.
- 3) Signs should not be backlit or equipped with flashing, oscillating or moving lights or beacons.

Guideline 8 The LTC may consider variances to siting, size, or parking regulations where the variance may result in closer adherence to the objectives and guidelines of this development permit area.

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STEEP SLOPES HAZARD DEVELOPMENT PERMIT AREA

Authority

This development permit area is established pursuant to Section 919.1(1)(b) of the *Local Government Act*.

Special Conditions or Objectives that Justify the Designation

It is the Object of the Islands Trust to “Preserve and protect the Trust Area and its unique amenities and environment of the Trust Area for the benefit of the residents of the Trust Area, and of British Columbia generally, in cooperation with municipalities, regional districts, improvement districts, other persons and organizations and the government of British Columbia.”

It is a policy of the Islands Trust Council that local trust committees shall in their Official Community Plans and regulatory bylaws, address the identification of areas potentially hazardous to development, including areas subject to flooding, erosion or slope instability, and strategies to direct development away from such hazards.

Furthermore, the province of British Columbia’s *Local Government Act*, requires that an Official Community Plan include restrictions on the use of land that is subject to hazardous conditions.

The Galiano Island Local Trust Area contains areas of steep slope that, in combination with geological conditions, may pose a hazard to development, principally in the form of rock fall. The Local Trust Committee has obtained advice from a geotechnical consulting firm on the general location of such areas, as well as recommendations to restrict development activities that could increase or exacerbate such hazards.

The general intent of the designation of this development permit area is to ensure that land alteration, including tree removal, that is not subject to assessment by a registered professional initiated by the subdivision approving officer or the building inspector in the exercise of their respective powers, does not expose persons or property to an unacceptable probability of slope instability or other geological failure occurring under post-development conditions. The Local Trust Committee has determined, on the basis of the expert recommendations, that a probability in excess of 10% in 50 years is unacceptable for this type of hazard.

The Steep Slopes Hazard DPA is also designated as an area for which development approval information may be required as authorized by Section 920.01 of the *Local Government Act*. Development approval information in the form of a report from a qualified engineer or geoscientist may be required due to the special conditions and objectives described above.

Application Requirements

All applications shall be consistent with all requirements established in the fees bylaw, development procedures bylaw and development approval information bylaw adopted by the Galiano Island Local Trust Committee.

Designation

The Steep Slopes Hazard Development Permit Area designates lands of Moderate Hazard Slope (22.5 - 45 degrees) and High Hazard Slope (>45 degrees). These two classifications are shown in a generalized representation on Schedule XX. The definitive designation and delineation of Development Permit Area Eight consists of a digital record compiled by means of a digital elevation model. This digital record is stored and maintained in a Geographic Information System at the offices of the Islands Trust.

Generally, the DPA contains land that may be potentially hazardous because of a combination of steep slope and geological conditions.

Development Permit Exemptions

The following activities are exempt from any requirement for a development permit. Despite these exemption provisions, owners must satisfy themselves that they meet any other applicable local, provincial or federal requirements.

- a) construction of, addition to or alteration of a building or other structure for which a building permit has been granted;
- b) land alteration for which a written statement from a registered professional engineer or geoscientist with appropriate education, training, certification and experience in geological hazard assessment has been submitted to the Islands Trust, providing an unqualified opinion that the development as proposed would not expose persons or property to slope instability or other geological failure hazard with a probability in excess of 10% in 50 years;
- c) subdivision not involving land alteration;
- d) land alteration and tree cutting within 5 metres of the foundation of a building or structure for which a building permit is required;
- e) the placement of impermanent structures, such as benches, tables and garden ornaments;
- f) agricultural activities conducted in a manner consistent with normal farm practices as defined in the *Farm Practices Protection (Right to Farm) Act*;
- g) gardening and yard maintenance activities within an existing landscaped area, including mowing, pruning, planting and minor soil disturbance that does not alter the general contours of the land;
- h) tree limbing or tree topping, unless the work can reasonably be expected to result in the death and removal of the tree and root system;
- i) the removal of trees that have been examined by an arborist and certified to pose an immediate threat to life or property;
- j) the construction of a trail provided all of the following apply:
 - i. the trail is 1 metre wide or less;
 - ii. no trees with a trunk diameter greater than 20 centimetres (measured 1.5 metres above the ground), are removed;
 - iii. the surface of the trail is pervious; and
 - iv. the trail follows the existing topography and does not alter the contours of the land;
- k) the construction of a fence provided no trees with a trunk diameter greater than 20 centimetres (measured 1.5 metres above the ground) are removed, there is

- no alteration to the contours of the land, and the disturbance of vegetation is restricted to 0.5 metres on either side of the fence;
- l) repair and maintenance of existing roads, driveways, utility lines, infrastructure, paths or trails, provided there is no:
 - i. expansion of the width or length;
 - ii. blasting, excavation or fill placement which alters the pre-existing grade; or
 - iii. installation of new or additional impervious surfacing, including paving, asphaltting or similar surfacing;
 - m) within the moderate hazard slope classification only (22.5 – 45 degrees of slope):
 - i. installation of septic fields;
 - ii. construction of retaining structures less than 1.2 metres in height;
 - iii. land alteration, including the construction of driveways, comprising excavation or fill placement that does not alter the pre-existing natural grade by more than 0.5 metres at any point;
 - iv. removal of vegetation, other than trees with a trunk diameter greater than 20 centimetres (measured 1.5 metres above the ground);
 - v. cutting and removal of up to 5 trees, not directly upslope of an existing building or structure, in any one calendar year on any one lot provided the stumps are not removed; and
 - vi. cutting of trees and removal of vegetation reasonably necessary for the construction or installation of the work exempted in (m)(i), (ii) or (iii).

Guidelines

The intent of this development permit area is to ensure that development in the form of land alteration and tree cutting meets the objectives described above. The LTC should be satisfied that the objectives have been met where applicable and impose conditions where appropriate:

1. In general, all development in this DPA should be undertaken in a manner that does not expose persons or property to slope instability or other geological failure hazard with a probability in excess of 10% in 50 years.
2. Where an applicant proposes to:
 - a) construct services, including roads, driveways, utilities, or septic fields;
 - b) alter land, including placement of fill or excavation; or,
 - c) remove trees or other vegetation,

the application should include an assessment of the likelihood and probability of a geological failure occurring and, through provision of a detailed geological hazard assessment, identify options and measures to ensure that the proposed development would not expose persons or property to slope instability or other geotechnical hazard with a probability in excess of 10% in 50 years. Where the geological hazard assessment report describes an area as suitable for development provided that specific mitigating measures are taken, the development permit should only allow the development to occur in compliance with the measures described in the report.

3. Monitoring and regular reporting to the Islands Trust by a registered professional engineer or geoscientist at the applicant's expense may be required during construction and land development phases, as specified in a development permit
4. A development permit should not allow any development activities to take place within any area identified by a geological hazard assessment as exposing persons or property to a landslide or other geotechnical hazard with a probability in excess of 10% in 50 years.
5. If the nature of the proposed work in the DPA changes after the geological hazard assessment report has been prepared such that the professional's assessment of the impact of the development may reasonably be expected to be affected, the LTC may require the applicant to obtain a new development permit, or to have the professional update the hazard assessment at the applicant's expense and in that event may revise DP conditions accordingly.
6. Where a permit authorizes the cutting of trees, re-planting and maintenance of disturbed areas should be considered for inclusion as conditions of the permit. The planting and introduction of non-native tree species should be avoided and the permit may require a landscaping plan and a security, in the form of an irrevocable letter of credit, for 125% of the cost of re-planting the site as determined by a certified professional.
7. Applications involving construction of new driveways or other accesses should be referred to the Fire Chief for comment with respect to the location, gradient and construction standard of the work.
8. The LTC may consider variances in the siting of buildings and structures required by the Land Use Bylaw where the variance may result in a reduction in potential hazards to development.

Proposed Galiano Groundwater Study

Draft Terms of Reference

October 20, 2010

Background

The LTC is undertaking a review and update of its OCP and has identified the need for additional research on groundwater issues as a priority. A Water Advisory Committee has provided a report and recommendations to the LTC on issues and concerns related to water on the island. Based on the recommendation of that committee, the LTC has resolved to use available funding to support additional research into the state of the water supply on the island. The LTC has requested that a terms of reference be developed for review, which would form the basis of the scope of work of a groundwater study.

Objectives

With the overall goal of protecting groundwater resources, the objectives of the proposed research are:

1. To review existing reports and recommend an optimal method for identifying critical groundwater areas
2. To identify data gaps and propose a program of future data gathering
3. To assess the impacts of various existing and potential land uses on critical groundwater areas and recommend management strategies.

Specific Questions to be Addressed

1. Assess the utility of using existing Islands Trust watershed mapping to delineate/revise groundwater regions
2. Assess the utility of using existing Islands Trust Digital Elevation Mapping (DEM) to delineate/revise recharge/discharge areas.
3. Review and comment on standards/criteria for identifying critical groundwater areas in previous reports, including commenting on the utility of the following groundwater supply measures:
 - a. Demand/storage ratio
 - b. Demand estimates
 - c. Recharge rates
 - d. Storage coefficients
 - e. Water balance modeling
 - f. Analysis of topography, soils and geologic structure
4. Assess the adequacy of current estimates (based on reports in 3) and propose a methodology for delineating or revising critical groundwater areas using current data and mapping.
5. Identify and comment on potential or confirmed groundwater quality issues, including (but not limited to):
 - a. Saline intrusion
 - b. Naturally occurring chemical constituents which may be a risk to human health (e.g. Arsenic)
 - c. Risk of contamination due to surface sources

- d. Poorly functioning septic systems
6. Assess the potential impact of land use activities, current and permitted future, on critical groundwater areas, including the following:
 - a. Small-lot residential development
 - b. Large lot residential development
 - c. Land alteration activities, including vegetation and tree removal, and road construction
 - d. Commercial, industrial and home occupation uses
 7. Review and comment on effectiveness of existing relevant regulations, specifically:
 - a. Subdivision servicing regulations
 - b. Requirement for cisterns in new construction in Water Management Areas
 - c. Development Permit Area 4 - Elevated Groundwater Catchment Areas
 8. Provide recommendations on additional appropriate groundwater management measures to address current and potential land use impacts on critical areas.
 9. Identify issues where additional, reasonably attainable data could improve understanding or identification of critical areas. Recommend a program of future data acquisition.

Data Sources

There are a number of existing reports and data sources that should be used in the analysis, and would be provided by Islands Trust and obtained independently by the proponent:

1. Existing Galiano groundwater reports: Kohut and Johansen, 1998; Harrison, 1994; Thurber, 1993; Mordaunt and Hodge, 1983, Water Advisory Committee, 2010.
2. Relevant groundwater reports from other islands.
3. Mapping: Groundwater vulnerability mapping, watershed modeling, Digital Elevation mapping, soils mapping, zoning and build-out.
4. Ministry of Environment WELLS database, provincial aquifer mapping, provincial observation well data.
5. Subdivision hydrology reports.
6. Best practices documents, such as the Groundwater Bylaws Toolkit.
7. Current bylaws, regulations and DPA.
8. Other relevant documents or sources

Deliverables

1. A report addressing the issues identified in this terms of reference and providing recommendations.
2. The expectation is that this would not be a field study, but would be a review of existing reports, information and data. It would not involve providing a mapping product, mapping would be carried out by Islands Trust, based on recommendations of this review.

Budget and Timeline

1. Trust Council has made \$10,000 available for a groundwater study on Galiano in the 2010-11 budget. In addition, a portion of the 2010-11 year Galiano OCP review project budget may be made available to supplement the Trust Council allocation.
2. The work would need to be substantially completed by March 31, 2011. In order to provide at least 3 months for the proponent to undertake the analysis, a request for proposals should be issued in November, with a contract issued before the end of December.