



# **GREEN SHORES RATING SYSTEM: PILOT PROGRAM RESULTS**

**NOVEMBER 2009**

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A PROJECT OF THE STEWARDSHIP CENTRE FOR BRITISH COLUMBIA  
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# Green Shores Rating System - Pilot Program Results

Nov-09

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# 1. Introduction

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The **Green Shores** project was initiated by the Stewardship Centre of BC in 2005 to promote sustainable use of coastal areas through planning and design that recognizes ecological features and functions. The project is aimed at providing resources for coastal landowners, developers and managers that help to minimize the negative impacts of human development on coastal systems, and to restore coastal ecosystem functions and processes of previously developed sites. Green Shores (GS) promotes incorporating ecosystem services in the planning and design of all types of shoreline development.

A key component of the Green Shores project is development of a voluntary **rating and assessment system** designed to encourage coastal landowners, designers and builders to develop shoreline properties in a way that ensures the long-term integrity of shoreline ecology. The rating system is modeled on the LEED (Leadership in Energy and Environmental Design) Green Building Rating System™.

The rating system is comprised of prerequisite and optional criteria or “credits”, each of which are allotted a certain number of points. The premise behind the rating system is that acquiring sufficient points through appropriate design and construction allows a project to become Green Shores Certified.

Following a review of existing Green Building and similar rating and certification tools, the Green Shores Technical Working Group (TWG) developed the first draft of the rating system. This draft was reviewed by the Green Shores Advisory Committee and revised. The second draft was the subject of an expert peer-review workshop and a Users’ Forum. Input from these sources led to the pilot version “Green Shores Development Rating Credits Ver. D1” (Appendix A), which was released in June 2008. The next step was then to test this pilot ratings system on up to four coastal development projects in B.C.

## 1.1 Objectives

The objectives of the Ratings Systems Pilot Program were to:

- (a) Test the pilot version of the Green Shores Ratings credits, identifying revisions and refinements necessary to make the Ratings system workable;
- (b) Develop and test an associated Green Shores assessment process; and
- (c) Begin to build familiarity with the rating system and capacity within the BC professional community through use of third party volunteer assessors.

It is important to emphasize that the focus of this program was not to determine whether the pilot projects would achieve Green Shores certification but rather to try out and improve the ratings credits and assessment process.

## 2. Methods

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### 2.1 Pilot Project Identification

- A list of development projects were identified as possible candidates based on:
  - Stage of development – design completed or already constructed.
  - Ability to assess a wide range of credits.
  - Perceived willingness of proponents to participate.
  - Collectively represent a range of development and environmental conditions.
- Project proponents were contacted to determine their willingness and commitment. In two cases, the TWG was approached by proponents (the proponents had taken one or more Green Shores workshops) who wished to be ‘tested’ against the draft GS credits.
- Four projects were ultimately assessed (Table 1).

### 2.2 Assessment Teams and Template

- A list of potential volunteer assessors was compiled primarily from participants in previous GS workshops and professional associates known to be interested in the GS mandate.
- Assessment teams comprised of at least three professionally-certified individuals were assembled for each pilot project based on:
  - The expertise required to assess each pilot project - e.g., engineering, coastal geomorphology, coastal/marine ecology, landscape architecture.
  - Independence – the assessors could not be involved with the project directly (as part of design team) or indirectly (as subcontractor, consultant, etc.).
  - Proximity to the project – local experts were used to reduce costs and time requirements.
  - Ability and willingness of the individuals to commit time required.
- Table 1 identifies the individuals involved with each of the 4 pilot projects. While some expenses were covered (e.g., travel costs), Assessment Team members were not remunerated for their time or expertise.
- Teams were provided with a draft “Rating Matrix” (Appendix B) that outlined all the GS Credits and provided spaces for scores and comments on each credit - how the submittals addressed the credit and the rationale for scoring the credit. Space was also provided for general comments about the Assessment process. The draft Matrix was modified slightly through the course of the 4 assessments to improve clarity and usefulness to the assessors.

### 2.3 Submittals

- Proponents were guided by the Development Rating Credits Ver. D1 report in determining applicable credits and compiling associated submission materials. Formats varied among submittals.
- Assessment teams were provided with submittals 1-2 weeks prior to the applicable site visit.

### 2.4 Site Visits

- The assessment team visited their respective pilot projects, typically spending 2-6 hours on-site depending on the level of complexity of the project. In one case (Southeast False Creek), the site visit included a pre-meeting with the project proponent(s).

- Each assessment team was accompanied by one or more representatives of the project and one or more TWG members.

## 2.5 Assessment Teams' Reports

- The assessment teams worked through the submittals and, using the Template, rated the proposed development assigning points to each of the Green Shores' credits. Assessments included supporting text about how the rating was achieved, as well as comments on the assessment process and on the clarity and usefulness of the credits themselves. The Assessment Team then presented their report and completed Template to the TWG.

## 2.6 Assessing the Assessments

- The TWG debriefed with each assessment team as part of the review of their respective reports.
- The TWG provided a response to the Assessment Team and to the Proponent on the results of the Assessment (see example in Appendix C). Though the TWG emphasized that the objective was not to “certify” the project but rather to gain experience in applying the credits and rating system, the proponent was informed of the hypothetical “score” given by the Assessment Team and the basis for that score.

**Table 1: Pilot Projects**

Project	Date Assessed	Status at time of Assessment	Description	Assessment Team
Dick Murphy Park, Tyee Spit Campbell River	December 2008	Built, possibly further phases planned	Example of alternative shore protection using beach nourishment; park with no buildings.	Sarah Bonar - R.P. Bio., Chatwin Engineering Jodi Harney - Ph.D. Geomorphologist; Coastal & Ocean Resources Inc. Jim Mitchell - P.Eng. coastal engineer, Emerald Sea Engineering
Essencia, Esquimalt Lagoon	July 2009	Pre-design	Low lying coastal lagoon, wetland and riparian restoration potential.	Brendan Holden - P.Eng. coastal engineer Gina Lemieux - R.P. Bio, marine ecologist, Archipelago Marine Research Ltd. Scott Murdoch – Landscape Architect, Murdoch De Greef Inc.
South False Creek Olympic Village	March 2009	Built with possible future phases	Former industrial lands (“brownfield”) that are part of the 2010 Olympic Village site.	Beryl Allen - Landscape Architect, Cypress Creek Design Susan Davidson - P.Eng. coastal engineer, Sea Science Katherine Dunster - Landscape Ecologist, Unfolding Landscapes
Nanoose First Nation Camp ground	October 2009	Built	Beach nourishment; riparian re-vegetation; possible upland development in the future	Cara MacDonald - Landscape Architect, MacDonald Gray Consultants Rowland Atkins - P.Geo. geomorphologist; Golder Assoc. Rob Russell - R.P. Bio., Castor Consultants

### 3. Discussion – “Lessons Learned” for the Rating System

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The objective of the pilot projects was to test the rating system, as opposed to determining whether the projects can attain Green Shores certification. The TWG wished to gain experience in applying the credits and rating system in order to improve both the ratings and the process. The pilot projects were also intended to help rationalize and finalize the “score” needed for GS certification, including any “levels” of certification (i.e., basic, silver, gold, etc.).

Therefore, the following summarizes the experience gained in applying the rating system to the four pilot projects, pointing to revisions and refinements in the credits and the rating process.

#### 3.1 The Rating System in General

- The rating system should be able to address different **development stages**:
  - final design – conditional on “as built”.
  - as built (assumed) – initial certification.
  - post-performance monitoring – ongoing certification.
- The latter point requires consideration of the need for future project **recertification audits**, undertaken at regular intervals of say 5 years – to ensure that site uses such as conservation areas, riparian plantings, etc. have not been converted to other uses (playgrounds, boat launches, etc.)
- There needs to be clarity about assigning points when more than one measure is proposed or taken to address a credit. Can more points be given if more than one option is completed to address a given credit?
- At the same time, the potential for **double counting** of the same action for more than one credit needs to be eliminated. For example, the same measures regarding “rehabilitation” and/or “restoration” can address SHCP1, SHCP4, SHCP5 and PBS4.
- Consider whether **partial credits** can be given for partially meeting a quantitative credit (e.g., 35% rather 50% of shoreline habitat restored).
- Identifying the **natural boundary** on site plans is integral to several credits, and needs: a) greater explanation in the Ratings document; and b) emphasis in a “Submission Checklist” (see section 3.1.3 Process).
  - Could be equated to HHWLT or similar elevation, where appropriate (usually relatively sheltered shorelines where wave action is not a significant factor) and where data on these levels are available
  - Where there is a long history of filling or other shoreline manipulation such that the original natural boundary is no longer known, the identification of natural boundary should be based on current (pre-proposal) condition.
  - “Natural boundary may reflect the limit of permanent terrestrial vegetation – not necessarily the legal boundary”.
  - Alternatively, an undisturbed natural boundary and elevation can be surveyed from adjacent properties in some cases.
- The number of points required for Green Shores certification should probably be increased as there was a general consensus that the certification “was **too easy**”. In order to push the bar significantly beyond regulatory requirements, a higher point score should be required.
- Credits should be applicable to **‘brownfield’** (degraded) sites as much as ‘greenfield’ sites. For example, points should be awardable for improvements from brownfield conditions (e.g., creating or re-creating habitat) even when the original ‘greenfield’ condition may not be known.

- Clarity needs to be provided for situations where a **prerequisite is not applicable** - e.g. projects that do not include permanent structures.
- The credits address physical processes and riparian zone requirements adequately, but there needs to be more focus on the **biology** of the shoreline, particularly intertidal and subtidal communities. For example, consider a credit that asks: does the development create appropriate dynamics, substrate, etc. that is good for biological communities; e.g., good flushing, micro-currents or upwellings; etc
- Consider broadening the concept of “marine riparian” to “**marine backshore**” – the area that influences but is also influenced by the marine environment (froth zone, salt spray, etc.)
- The credits should better address **low energy coastal systems**.
- Consider including credits that address **social benefits**, such as public access or viewpoints.
- Consider a **simpler credit numbering system**. The pilot system attempted to follow the LEED model of numbering according to credit category, but that is not necessary. Also consider whether all pre-requisites should be listed together, rather than by credit category.
- Consider adding a “placeholder” optional credit for inclusion of a Green Shores AP on the project team which can be applied for when the Green Shores Accredited Professional is up and running.
- In the pilot version the prerequisites and credits are applied primarily to the proposed development activities and features. For example, existing buildings are exempted from the building setback prerequisite. It is unclear whether the coastal process prerequisite applied only to newly proposed shore construction, not pre-existing structures. The rationale was not to penalize developers for pre-existing conditions for which they were not responsible, however there is a potential to certify shore areas which clearly do not qualify. This concern applies primarily to the prerequisites and needs to be considered in the upcoming credit revisions.
- Consider adding reduction of risk to property in the introduction of the Ratings document (possibly as a fifth Guiding Principle)

### 3.2 The Rating System by Credit

#### PBS1 - Siting of New Permanent Structures (prerequisite)

- Projects may not always involve new structures. For these situations, this prerequisite should be dismissed (made “not applicable”).
- However, no structures means that there are also fewer optional credits available; consider re-establishing the baseline for certification in these cases, such that certification is based on a percent of applicable credits.
- Consider eliminating Option A entirely, as this option may be too easy and potentially not appropriate for some sites.
- The “Submission Checklist” should emphasize the following be shown on site plans submitted with a candidate project:
  - natural boundary.
  - minimum setback (15 m and/or local regulations).
  - existing buildings located within assigned setback.
  - vertical elevations: elevation of natural boundary and of occupied portions of buildings within X m of natural boundary.
- For the vertical elevation requirement. review whether both conditions need to be met where local Flood Construction Level requirement is less than 2 m above natural boundary elevation.
- Is use of fill to raise the base of the building to 2.0 acceptable?

- Public walkways/bikeways (i.e., hard surfaces) are exempt from the minimum 15 m setback from natural boundary; i.e., they may be constructed within the setback. However, in these situations, consider increasing the minimum 15 m setback (for buildings) to make up for such extensive non-permeable surfaces and to facilitate more marine riparian planting.
- Re-consider exempting pre-existing buildings from the setback requirements (see final bullet under 3.1 above).

#### **PBS2 - Siting of Permanent Structures (optional)**

- Clarify whether this credit still applies to construction on fill.
- Criteria for awarding 1 versus 2 credits need to be defined, or are 2 credits always awarded?.

#### **PBS3 - Site Design with Conservation of Shoreline (optional)**

- Provide a definition of “conservation area or park” to assist applicants and assessors in determining applicability of this credit. A conservation area is different from a park. A ‘park’ may not maintain nor enhance habitat diversity and function – a Green Shores Principle, particularly if the park is highly urbanized, focused on recreation, and/or the public will have open access to the entire area, regardless of habitat sensitivities.
- In the guidelines for applicants, cross reference could be made to completing SHCP1, SHCP2, SHCP3, and SHCP4 prior to submitting supporting documentation for this credit.

#### **PBS4 - Re-development of designated Contaminated Sites (optional)**

- A BC MOE letter authorizing remediation measures proves eligibility for this credit. For completed, projects documentation and sign-off that acceptable measures have been completed should be required. For design stages, awarding the points should be contingent on completion of the authorized measures.
- Need to define “meeting contaminated site criteria”. If the site is not officially classified as contaminated by a relevant regulatory agency, a final report and analytical results prepared by a qualified professional (e.g., environmental scientist) indicating contaminant levels exceed provincial or federal standards should be acceptable.

#### **SHCP1 - Conservation of Critical/ Sensitive Habitat (prerequisite)**

- The interpretation of this credit needs to be clarified. Since protection of critical/sensitive habitats is usually required by law, it is not clear this credit should be awarded simply for meeting the applicable government regulations. If applicable regulations are not met, the project should be prohibited by the applicable jurisdiction from proceeding. The only requirement of this prerequisite which raises the bar from basic regulatory requirements is the “prohibition” of off-site compensation for impacts to critical/sensitive habitats. This also may not be desirable in all cases, where compensation may occur in a higher value coastal ecosystem.
- A map and description of Critical/Sensitive Habitat needs to be included with the proponent’s submission.
- Freshwater riparian/estuarine and marine riparian areas can both be components of a coastal ecosystem yet these environments have distinct characteristics. Need to clarify that the Rating System does not address the freshwater riparian environment, hence applicants should not be seeking credits for

riparian habitat conservation. How far ‘up’ the marine/ estuarine environment is applicable needs clarification.

- Credit cannot be granted without baseline (pre-development) intertidal and subtidal inventories. Be clear about what constitutes “baseline” – i.e., pre- this development or “original”. In brownfield re-development, usually looking for substantial improvement over existing conditions rather than return to ‘original’ conditions.
- Credit also requires confirmation of functionality of compensation habitat, at least for completed projects.

### **SHCP2 - Marine Riparian Zone (prerequisite)**

- The stated “requirement” does not address ecological function of the proposed marine riparian vegetation, one of this credit’s intents, but rather focuses just on quantity – i.e., width. May need to come up with a way of measuring restoration of “function”, as opposed to just a minimum width.
- Consider expanding the requirements for this credit to include an assessment of the re-vegetation plan, including selected plant species, by a qualified professional biologist with expertise in marine riparian habitat. The habitat planting, species chosen and landscape design should be matched to the natural characteristics of the marine environment at the project site; e.g., exposed sandy, rocky, protected estuary, mudflats, etc.
- If the intent of the habitat area planting is to create habitat, it would be useful to know “for whom or what is the habitat being created ( e.g., dune/beach grass vs. coastal forest) and is the habitat being restored appropriate to the site?”
- “Riparian” does not include intertidal re-vegetation, but the Ratings should account for intertidal planting areas. Bathymetric contours on the planting plans would be needed to determine whether the intertidal planting areas will actually be intertidal.
- Clarify the difference between the 15 m setback for buildings and the 5 m riparian buffer over minimum of 50% shore length.
- Check this credit and coordinate with SWM1, with respect to stormwater infiltration design within the riparian buffer.

### **SHCP3 - Conservation of Sediment Processes (prerequisite)**

- This credit needs to consider low-energy environments and environments dominated by suspended sediment transport processes. Provide guidance regarding submittal requirements for sites with minimal or no sediment processes.
- Provide guidance on the extent to which areas outside the project area shore be included (e.g. alongshore drift within a larger segment of shore (drift cell) within which the project property lies) .

### **SHCP4 - Rehabilitation of Critical/ Sensitive Habitat**

- Consider re-naming this credit to “Restoration” or “Recovery of Critical Habitat”, to differentiate it from SHCP5.
- Provide guidance regarding documentation of pre-existing habitat conditions for all zones (riparian, intertidal and subtidal).
- Provide guidance on information to support the classification of compensatory habitat as critical or sensitive.
- Be clear regarding what restoration/rehabilitation measures would qualify – e.g.,, restoration of freshwater aquatic/riparian habitat, or restoration of purely terrestrial (non-riparian) habitat would not

qualify; removing invasive species such as blackberry and broom and replacing with native species in marine riparian areas would.

#### **SHCP5 - Rehabilitation of Degraded Habitat and SHCP8 - Remediation of Coastal Sediment Processes**

- Re-name or provide greater clarification regarding the meaning of “remediation” (not related to contaminants) and “degraded” (e.g., hardened shores – riprap, bulkheads, etc.)
- Ensure ways of not double-counting the same action under both of these credits as well as credit SHCP4.
- Consider whether actions of doubtful or only partial benefit should receive partial credits – e.g., replacing a solid pier with pilings may have little benefit to coastal process along long-energy shorelines with little longshore drift. Should this credit be awarded simply on the principle that removing a solid pier is desirable?
- Clarify that complete removal of a bulkhead should be allotted an “extra” credit, given the extra challenges associated with removal-
- Re. SHCP8 - revise this credit to include consideration of low-energy environments and environments dominated by suspended sediment transport processes.

#### **SHCP6-Enhanced Riparian Zone**

- Clarify that re vegetation refers to riparian area – check that other credits cover enhanced intertidal and subtidal planting.

#### **SHCP7-Light Pollution Reduction (optional)**

- Give credit if the project does not light up the foreshore, even if lighting is not necessary as part of the project. This raises the bar on points needed for certification.
- Consider an optional credit for reducing/modifying existing lighting that may cause light trespassing.

#### **SWM1-Integrated Stormwater Management Planning & Design (optional)**

- It is not clear how the credit requirements match or exceed existing guidelines and regulations. Review this credit’s requirements against:
  - LEED stormwater
  - Water Balance Model assumptions
  - DFO and MOE guidelines (if applicable)
  - some more ‘advanced’ municipal regulations, such as Campbell River’s.

#### **PDP1 - On-site Environmental Management Plan (prerequisite)**

- Provide guidance for developments with multiple individual properties and/or multiple construction contracts to ensure that collectively the individual environmental management plans address the intent of the credit.
- Revise assessors’ template to include sediment and erosion control.
- Consider an optional credit for additional monitoring reports to determine long-term performance.

### **PDP2-Innovation (optional)**

- Clarify that maximum two (2) points are available for innovation – regardless of # innovations being applied for.
- Provide more guidance – possibly by way of examples – of what constitutes creditable innovation.
- Allow for points for consultation processes that go beyond the basic stakeholder consultation; i.e., extensive involvement of community and/or integrated design process (involved range of expertise without the formality).

### **PDP3 – Public Education**

- Consider 1-2 optional credits for demonstration of community stewardship initiatives associated with the development project.

## **3.3 The Rating Process**

- Incorporate GS certification sign or plaque into the Business Plan
- Identify which credits absolutely require a site visit; (e.g., outreach signage, innovation, lighting); while others can probably be granted based on submittals, not a site visit.
- Develop a checklist or submittal template for applicant submissions to ensure all documentation is in place and ready for review for the Assessment Team.
- Green Shores should pre-screen applications for completeness prior to submission to assessors.
- Confidentiality should be maintained by all parties until the process is complete. There should be no media exposure for projects under evaluation until the evaluation is finished.
- Professional issues (notification, signatures, and liability) need to be addressed and resolved with APEGBC, CABBC, BCSLA, and others.
- Contracts should be set up between Green Shores, Project Applicants, and Assessors. The roles, responsibilities and liabilities of all parties need to be clearly defined in the contract documents. Even as volunteers, assessors need to be protected (liability) by Green Shores, in order to get both good critical work and a body of knowledgeable and willing assessors!
- Assessors need to be compensated or acknowledged in some way IF they are expected to continue to be involved on a volunteer basis. Shoreline assessments are lots of work, involving many hours of plan and report reading along with site visits and meetings. [Note that under the proposed Rating process, third party assessors would be contracted for their services.]
- Stormwater expertise should be added to the Assessment Team for many developments.
- Create a roster of qualified Green Shores professionals that includes: engineers, landscape architects, biologists, etc. Criteria for inclusion on the roster of qualified professionals would also need to be developed in order to ensure fairness to all (e.g., Green Shores Accredited Professionals).
- Consider how to provide for a preliminary or “design phase review” in order to influence a development design, that would motivate a developer and allow advertising that a development is working toward GS Certification. The design phase review would need to be followed up by an “As built Review” on completion of the project, to ensure that the construction is still consistent with the Ratings credits and can legitimately be awarded GS certification.

## Conclusions

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- ❑ While some modifications to the Credit and Rating System are required, the overall process worked.
- ❑ Double-counting of credits is a primary issue. In several cases, the TWG felt that multiple credits had been awarded by the assessors for the same component of the project. This issue can be resolved with relatively minor changes to the Credit and Ratings System.
- ❑ The proposed benchmark for achieving certification was too easy. Only one pilot project did not achieve a “certification” score and the main reason was a deficiency in the submission (lack of appropriate documentation in the proponent’s submittal), rather than a actual failing to meet a requirement. The overall number of points that are required for certification probably needs to be increased to challenge developers to a sustainable design level, while at the same being careful to not discourage prospective Green Shores projects.



**Appendix A: Green Shores Development Rating Credits, Ver. D1. June 2008.  
British Columbia Stewardship Centre, 68p.**

Attached as separate document.



## **Appendix B: Green Shores Rating Matrix, Pilot Version 2008**



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**GreenShores Rating Matrix, Pilot Version 2-2, March 2009**

<b>Project Name:</b>	<b>Location:</b>
<b>New or Existing Development:</b>	<b>Development Category:</b> Single Family, Multi Family, Industrial, Commercial, Mixed, Park, Other
<b>Shore Protection Planned:</b> Y / N	<b>Stage:</b> conceptual, design, construction, complete
<b>Date of site visit:</b>	<b>Date assessment completed:</b>
<b>Names/affiliations of Project Assessors:</b>	

	PROJECT AND BUILDING SITING	Y/N/?	Submittals	Score	Elaboration on decision. What revision, if any, is required?
<b>PBS1</b>	<b>Siting of New Permanent Structures: requires 1, 2 and option A OR B</b>		<b>Prerequisite: 0,1</b>		
	1) Setback => to what local / regional regulations require		<i>Site plan showing NB, ground elevation, setbacks, flood control heights for PS's.</i>		
	2) Setback => Specified Flood Construction Levels				
	<b>Option A:</b> >/= 15m setback from natural boundary				
	If on bluff, setback > 3X vertical bluff height				
	Setback >/= 2m vertical elevation above natural boundary				
	<b>Option B:</b> Allows for 50 years of erosion without shore protection, with a report from Qualified Coastal Professional		<i>QCP report – see pg 16</i>		
	Score (one prerequisite credit available) 0 or 1		Prerequisite: 0,1		
<b>PBS2</b>	<b>Siting of New Permanent Structures: Option A OR B</b>		<b>Optional: 0,2</b>		
	<b>Option A:</b> existing property is being re-developed or upgraded and shore protection exists along the shoreline: must meet requirements 1-4				
	1) Setback must be beyond where natural boundary location would be if there was no shore protection, plus the following requirements:		<i>QCP report as per PBS1 Option B + projection of NB thru Project's life, climate change impacts, etc. – see pg 20.</i>		
	2) Extra setback for predicted change in natural boundary in projected life				
	3) Extra allowance for required 5 meter riparian zone				
	4) Existing structures moved / removed to comply with above				
	<b>Option B:</b> existing property is being re-developed or upgraded and where no shore protection exists along the shoreline:				
	1) Any new permanent structure shall be setback landward of the extrapolated position of the Natural Boundary plus the allowance for the required riparian zone (5m) over the		<i>See above</i>		

	PROJECT AND BUILDING SITING	Y/N/?	Submittals	Score	Elaboration on decision. What revision, if any, is required?
	projected life				
	1) Any new permanent structure shall be setback landward of the extrapolated position of the Natural Boundary plus the allowance for the required riparian zone (5m) over the projected life				
	2) Any existing structures seaward of the extrapolated position of the Natural Boundary will be moved or replaced with new to conform with (1) above.				
	<b>Score</b>		<b>Optional: 0, 2</b>		
<b>PBS3</b>	<b>Site Design with Conservation of Shoreline: (For site plans and subdivision designs affecting a shore area.)</b>		<b>Optional: 1</b>		
	Minimum of 75% of the shoreline is a <b>conservation area</b> (needs definition) or park.		<i>Site plan showing: conserv'n area - widths, length; plan for protection; etc. – see pg 23</i>		
	Average width of 30 m or greater, measured as the horizontal distance perpendicular to the natural boundary, with a minimum width of 7.5 m at any given point.				
	<b>Score</b>		<b>Optional: 1</b>		
<b>PBS4</b>	<b>Re-Development of Contaminated Sites (upland)</b>		<b>Optional: 1</b>		
	Develop on a contaminated site and provide remediation as required by provincial or federal contaminated site standards.		<i>Letter from authority and report that remediation completed – pg.27</i>		
	<b>Score</b>		<b>Optional: 1</b>		

	SHORE HABITAT AND COASTAL PROCESSES	Y/N/?	Submittals	Score	Elaboration on decision. What revision, if any, is required?
<b>SHCP1</b>	<b>Conservation of Critical and Sensitive Habitats</b>		<i>Plan of critical habitat; report indicating 'no net loss'/net gain; QEP certifying – pg. 19</i>		
	No net loss of critical or sensitive habitats within development shore zone. Off-site compensation for habitat losses cannot be used to meet this credit requirement.				
	<b>Score</b>		<b>Prerequisite: 0,1</b>		
<b>SHCP2</b>	<b>Riparian Zone</b>		<i>Site plan showing location relative to dev't; proof of protection/ designation; plan for protection – pg.31</i>		
	Conserve and restore riparian zone. Where restoration is needed, a re-vegetation plan/design prepared by a registered professional biologist or certified landscape architect with experience in coastal riparian ecosystems is required.				
	<b>Score</b>		<b>Prerequisite: 0,1</b>		
<b>SHCP3</b>	<b>Conservation of Coastal Sediment Processes</b>		<b>Prerequisite: 0,1</b>		
	<b>Shore Sediment Supply: A OR B</b> A) Site development must be designed such that the need for shore protection works is not required over the life of the project or a 50 year cycle of natural erosion, whichever is greater OR		<i>QCP report of coastal sediment balance and pathways – see pg. 35</i>		
	<i>B) If shore protection works are required, provide a design that emulates natural sediment supply to the foreshore for a 50 year cycle of natural erosion of life of the project, whichever is greater. Texture and size of sacrificial material must be appropriate to the site.</i>				
	<b>Score</b>		<b>Prerequisite: 0,1</b>		
<b>SHCP4</b>	<b>Rehabilitation of Critical and Sensitive Habitats (Riparian or Foreshore)</b>		<b>Optional: 1</b>		

	<b>SHORE HABITAT AND COASTAL PROCESSES</b>	<b>Y/N/?</b>	<b>Submittals</b>	<b>Score</b>	<b>Elaboration on decision. What revision, if any, is required?</b>
	Develop and implement a critical/sensitive habitat rehabilitation plan for the development shore zone (creation of riparian or foreshore critical/sensitive habitat.) No minimal threshold area for this credit is specified, but the applicant needs to demonstrate that the rehabilitation plan has an 80% or greater success factor 12 months after construction or planting as measured by plant viability or area colonized.		<i>Rehabilitation plan prepared by QEP – see pg. 39</i>		
	<b>Score</b>				

	<b>SHORE HABITAT AND COASTAL PROCESSES</b>	<b>Y/N/?</b>	<b>Submittals</b>	<b>Score</b>	<b>Elaboration on decision. What revision, if any, is required?</b>
<b>SHCP5</b>	<b>Rehabilitation of Degraded Habitats</b>		<b>Optional: 1 or 2</b>		
	Provide remediation of degraded foreshore within 1 km of the development site. The remediation plan should address a minimum of 50% of the targeted degraded area. If the remediation plan includes addressing contaminated sediments, then provincial or federal contaminated site standards or remediation levels specified by the local regulatory authority must be met.	<b>1</b>	<i>Foreshore rehabilitation plan by QEP – see pg. 41</i>		
	Given the technical difficulties associated with the removal of bulkhead protection (seawalls, riprap) a bonus point is awarded if this strategy is employed to remediate degraded habitats.	<b>1</b>			
	<b>Score</b>		<b>Optional: 1 or 2</b>		

<b>SHCP6</b>	<b>Enhanced Riparian Zone</b>		<b>Optional: 0.5 – 4</b>		
	For sites meeting the riparian prerequisite credit an additional 0.5 points will be given for extending the riparian conservation zone by				
	A) each additional 15% of shoreline length to a maximum of 90% of the development property shoreline – to a maximum	0.5 – 1.5	<i>Site plan and letter/report by</i>		

	SHORE HABITAT AND COASTAL PROCESSES	Y/N/?	Submittals	Score	Elaboration on decision. What revision, if any, is required?
	of 1.5 points.		<i>QEP; pre- and post photos – see pg. 43</i>		
	B) each additional 5m of riparian zone width to a maximum average width of 30 m – a maximum of 2.5 additional points.	0.5 – 1.5			
	<b>Score</b>		<b>Optional 0.5 – 4</b>		
<b>SHCP7</b>	<b>Light Pollution Reduction</b>		<b>Optional 1</b>		
	<b>Upland only</b> 1. Document that no more than 5% of the total designed fixture lumens located above the natural boundary are emitted to areas below the natural boundary.				
	<b>Score</b>		<b>Optional 1</b>		
<b>SHCP8</b>	<b>Remediation of Coastal Sediment Processes</b>		<b>Optional 1-2</b>		
	Demonstrate the restoration of alongshore or across shore sediment processes, either through removal of existing structures, provision of sacrificial sediment materials or other means.	<b>1</b>	<i>QCP report in concert with SHCP 3 – see pg. 47</i>		
	For removal of bulkhead protection (seawalls, riprap) a bonus point is awarded if this strategy is employed to remediate coastal sediment processes.	<b>1</b>			
	<b>Score</b>		<b>Optional 1-2</b>		

	STORMWATER MANAGEMENT	Y/N/?	Submittals	Score	Elaboration on decision. What revision, if any, is required?
<b>SM1</b>	<b>Integrated Stormwater Planning and Design</b>		<i>Stormwater Management Plan by QP – see pg 49</i>		
	Minimum 20% of the development footprint – 1 Point or				
	Minimum 40% of the development footprint – 2 Points or				
	Minimum 60% of the development footprint – 3 Points				
	<b>Score</b>		<b>Optional: 1-3</b>		

	PROJECT DEVELOPMENT PROCESS	Y/N/?	Submittals	Score	Elaboration on decision. What revision, if any, is required?
<b>PDP1</b>	<b>Environmental Management Plan</b>		<b>Prerequisite: 1</b>  <i>Copy of Environmental Management Plan with proof that it adheres to BMPs; copy of Environmental Monitoring report (sample) – see pg. 53</i>		
	Develop and follow a site specific environmental management plan that includes:				
	2. Appropriate shore construction timing windows.				
	3. Measures taken to prevent the risk of hazardous materials and contaminant spills, including oil, gas and hydraulic fluid.				
	4. Response plan and equipment available in the event of an accidental spill of hazardous materials.				
	5. On site briefing and reporting requirements for environmental monitoring by a Qualified Environmental Professional.				
	6. A post construction monitoring plan if applicable.				
	<b>Score</b>		<b>Prerequisite: 0,1</b>		

	PROJECT DEVELOPMENT PROCESS	Y/N/?	Submittals	Score	Elaboration on decision. What revision, if any, is required?
<b>PDP2</b>	<b>Innovation</b>		<b>Optional: 1-2</b>		
	1) For credits with a specific performance measure – designs and techniques that (A) exceed the specified performance measure by 50% or (B) demonstrate a novel method of meeting the specified performance measure.		<i>Written rationale by QP, authorization by applicable authority – see pg. 55</i>		
	2) For credits without a specific performance measure or a performance measure that cannot be exceeded (e.g. “conserve 100% of....”) - demonstrate a novel method of meeting the credit or,				
	3) Demonstration that the project design has addressed a specific issue or situation not covered by any GREEN SHORES credit, but which addresses GREEN SHORES principles..				
	<b>Score</b>		<b>Optional: 1-2</b>		
<b>PPD3</b>	<b>Outreach and Public Education</b>		<b>Optional: 1</b>		
	Public signage on key shore issues, the project design concept and project performance or		<i>Written documentation, photos of examples – see pg. 57</i>		
	Tours and interpretive walks				
	An on-going coastal stewardship program for owners, occupants and site users				
	Any other public outreach initiative that can be demonstrated to meet the credit objective.				
	<b>Score</b>		<b>Optional: 1</b>		

### Certification Summary

<b>Prerequisite Credit Subtotal:</b>		5 required		
<b>Optional Credit Subtotal:</b>		20 possible		
<b>Credit Total:</b>			0	
<b>Certification Level:</b>				
<b>Not Certified:</b>				

Certified - All Prerequisites plus 3 Points

Silver Certified - All Prerequisites plus 6 Points

Gold Certified - All Prerequisites plus 10 Points

<b>All Submittals Received?</b>	
<b>All Reports by Qualified Professionals Received?</b>	

**Summary of revisions, submittals and/or reports required:**

**Green Shores Certification Effort Survey**

	<b>Hours</b>	<b>Rate / hour</b>	<b>Cost \$\$</b>	
<b>Proponents:</b>				
Time expended by proponent for rating process				
Extra costs incurred by proponent for rating process				
<b>Assessors:</b>				
Time expended by assessor for rating process				
Expenses incurred for rating process				

**COMMENTS ON CREDITS & RATING PROCESS:** interpretation, clarity, applicability to assessed project, etc.etc.

**General:**

**BY Credit:**

PBS1 (prerequisite)	
PBS2 (optional)	
PBS3 (optional)	
PBS4 (optional)	
SHCP1 (prerequisite)	
SHCP2 (prerequisite)	
SHCP3 (prerequisite)	
SHCP4 (prerequisite)	
SHCP5 (optional)	
SHCP6 (optional)	
SHCP7 (optional)	
SHCP8 (optional)	
SM1 (optional)	
PDP1 (prerequisite)	
PDP2 (optional)	
PDP3 (optional)	





## **Appendix C: Example of Assessment Letter to Proponent**



12 August 2009

Jordan Fisher  
 Jordan Fisher & Associates  
 201 – 25 Government St  
 Victoria, BC V8V 2K4

**RE: Green Shores Review of Essencia Development Submittal**

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Jordan,

The Green Shores Technical Advisory Group (GSTAG) has reviewed the assessors report of the Essencia Development Proposal and I am attaching that report for your review. The submittal that you provided, which was largely based on a conceptual plan, met prerequisite credits and would qualify as Green Shores certified (Table 1). However, at this stage many of the credits were “provisionally awarded” based on data still needed and would be re-assessed once the design had been finalized and missing data provided.

***The objective of the Pilot Projects is not to determine certification*** but rather to test the certification process. Here are a few of the items that we learned about the process from the Essencia Pilot.

1. In general the Essencia application was very clear and complete. The use of a checklist to indicate which credits were being claimed was especially helpful, and it is a tool that we will incorporate into future assessments.

2. It will probably be necessary to have two phases of review:

**Design Phase Review** – at this stage, design drawings are submitted and these are supported by professionally-certified documents (e.g., signatures by professional engineers or other professional accreditation). Credits would still be *provisionally granted*.

**As-Built Phase Review** – this would be at the completion of the project and would make sure that the actual construction is consistent with design drawings and with the submittals used in the Design Phase Review.

**Table 1 Score Summary**

	Assessor	GSTAG
Credits	Award	Award
PBS1	1	1
PBS2	2	2
PBS3	1	1
PBS4	1	0
SHCP1	1	1
SHCP2	1	1
SHCP3	1	1
SHCP4	1	0
SHCP5	?	0
SHCP6		4
SHCP7	1	1
SHCP8	1	0.2
SM1	3	3
PDP1	1	1
PDP2	2	2
PDP3	1	1
Totals:	18	19.2

■ pre-requisite credit

**Fisher/Page 2 of 3**

The GSTAG team thought that the *Conceptual Submittal*, as was submitted for Essencia, is likely appropriate as an internal review document for the proponent team; a draft assessment/ submission at this stage can still influence design as, in theory, design is not hardened.

At some point in the future, a performance review might be required but for the present Green Shores Credit Rating system, the certification will be provided for the project as constructed.

3. Specific Credit Claimed

See notes summarized in Table 2.

Should you have any additional questions, please feel free to contact us. We are hoping that the Essencia developers will allow the results of the assessment to be posted in the “pilot” sections of our website.

With regards,

John R. Harper, Ph.D., P.Geol.  
Pilot Project Coordinator  
Green Shores Technical Advisory Group

**Table 2 Summary of Issues Related to Green Shores Credit Rating for Essencia**

Number	Credit	Explanation
PBS1	Siting of New Permanent Structures	This credit emphasizes the importance of “establishing” the natural boundary early in the project so that setbacks and elevations can then be referenced. For this project especially, where the elevation criteria is likely the issue, fixing the natural boundary and overlaying a detailed topographic survey will be critical. State that a figure showing the surveyed natural boundary, 2m contour and proposed/constructed buildings would be required to receive this credit at the “as built” stage
PBS2	Optional Siting Credit	Significant setback proposed
PBS3	Conservation Area Designated	GS needs to reword this to indicate areas “will be conserved” – not necessarily a designated conservation area.
PBS4	Remediation of Contaminated Sites	Contamination not officially designated; need to determine a minimum area of contamination to acquire this point (e.g., 5 m <sup>3</sup> of soil removal not large enough for credit)
SHCP1	Conservation of Critical and Sensitive habitat	no issues
SHCP2	Riparian Zone	no issues
SHCP3	Conservation of Coastal Sediment Processes	no issues but see SHCP8 comment
SHCP4	Rehabilitation of Sensitive Coastal Habitat	GSTAG felt award of this credit amounts to double-counting with SHCP6. The double-count issue is one that has arisen several times in the pilots and it will be revised in the next version of the GS credit document.
SHCP5	Rehabilitation of Degraded Habitat	As claimed this is a double count of the contaminated site credit and the SHCP4 and should not be granted. given the small contamination area (<<1% of the alongshore length of the property, this credit should not be granted.
SHCP6	Enhanced Riparian Zone	Credits SHCP2, SHCP4 and SHCP6 are all claimed for riparian-related enhancement. The credits for the enhanced riparian are probably most appropriately awarded in this credit, as opposed to SHCP4 but should not be awarded in both credits. From the conceptual plan it is clear that 1.5 points will be awarded for lineal extent of riparian (to 90% of shoreline, but without further detail we don’t know the planned extent of the width of functional riparian (certainly 10m but as much as 30m?? Therefore we anticipate that 2-3 (10-20m of width) would likely be granted.
SHCP7	Light Pollution Reduction	GSTAG felt that this credit should be awarded if NO lighting of foreshore/riparian area is proposed so we don’t actually encourage lighting to be installed just to get a credit (i.e., “credit mining”). Credits will be updated to reflect this change.
SHCP8	Remediation of coastal Processes	GSTAG modified the assessors award. In credit SHCP3, it was indicated that the existing structure has no impact on coastal processes so a full credit award is not appropriate. However, GS wants to encourage property owners to “improve” so some recognition is appropriate. GSTAG decided that this is an example where a partial credit may be appropriate. GSTAG will develop guidelines for partial credit award.
SM1	Storm-water credit	no issues
PDP1	Environmental Management Plan	no issues
PDP2	Innovation	The credit claim for a charrette was awarded by the assessors but GSTAG thought that the charrette alone was not especially innovative. BUT the extensive community consultation and the subsequent significant modification of design based on the consultation should be the basis for the award of an innovation credit. The other credit claim – for the protection of 100% foreshore and the extensive set back raised some issues about how innovative a design feature is to be claimed. Bird friendly buildings were not considered to be clearly Green Shore related and not awarded.
PDP3	Education and Outreach	no issues