

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

**Riparian Areas Regulation: Assessment Report**

Please refer to submission instructions and assessment report guidelines when completing this report.

Date 2011-01-10

**I. Primary QEP Information**

First Name	Steve	Middle Name	
Last Name	Toth		
Designation	R.P.Bio	Company	Toth and Associates
Registration #	1788	Email	<a href="mailto:stoth@shaw.ca">stoth@shaw.ca</a>
Address	6821 Harwood Drive		
City	Lantzville	Postal/Zip	V0R 2H0
Prov/state	BC	Country	Canada
		Phone #	250-390-7602

**III. Developer Information**

First Name	Alan	Middle Name	
Last Name	Steeves		
Company	Character Developments		
Phone #	604-724-8005	Email	<a href="mailto:alansteeves@gmail.com">alansteeves@gmail.com</a>
Address	Unit #2B – 3411 Shenton Road		
City	Nanaimo	Postal/Zip	V9T 2H1
Prov/state	BC	Country	Canada

**IV. Development Information**

Development Type	Construction: High density (> 36 units per ha) Multi-Family Residential		
Area of Development (ha)	2.5	Riparian Length (m)	250
Lot Area (ha)	3.01	Nature of Development	Redevelopment
Proposed Start Date	2011-03-01	Proposed End Date	2013-12-31

**V. Location of Proposed Development**

Street Address (or nearest town)	560 Third Street and 265 Howard Avenue						
Local Government	City of Nanaimo			City Nanaimo			
Stream Name	Catstream						
Legal Description (PID)	008-745-854, 008-745-919			Region Vancouver Island			
Stream/River Type	Stream			DFO Area South Coast			
Watershed Code	920-389300-22700						
Latitude	49	09	49	Longitude	123	57	24

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## **Section 1. Riparian Area Assessment of 265 Howard Avenue and 560 Third Street, Nanaimo.**

On behalf of Character Developments (the developer) Toth and Associates Environmental Services conducted a Riparian Area Assessment according to the Detailed Assessment Methods of the provincial Riparian Area Regulation (RAR) of the properties noted above on January 7, 2011.

The proposed development of the subject properties includes a mix of multi-family and single family residential construction (Figure 1), park dedication, and road access development. The property is a former farm parcel located on the south side of the Catstream and consists primarily of pasture lands, with a riparian area comprised of Himalayan blackberry, red alder, English hawthorn, old fruit trees, pacific ninebark, and holly with a few western redcedar, black cottonwood and big leaf maple.

The high water mark of the accessible areas of the south bank of the Catstream was flagged with orange flagging tape. Most of the length of the Catstream adjacent to the subject property is located on fenced private properties, therefore it was not possible to mark all areas of the high water mark.

Topographic contrast varies from approximately 49m elevation in the northeast corner at the Catstream to 68m at the mid-point of the southern boundary of the property at Third Street. Stream gradient through the section of the Catstream adjacent to the subject property averages 1.6% based on City of Nanaimo LIDAR (Laser Imaging Detection and Ranging) 1m topographic mapping. Average channel width measured 2.7m (range 1.6m – 3.9m). The Streamside Protection and Enhancement Area (SPEA) setback determined from this assessment is the minimum allowable under the RAR of 10m from high water mark (Figure 2)

Toth and Associates have extensive experience with the fisheries resources and fish habitat on the Catstream. During 1991 – 2003, Steve Toth conducted adult coho escapement counts on the Catstream and other Nanaimo area streams for Malaspina College and DFO. In 1993, Steve Toth conducted detailed fish habitat assessments, water quality / quantity monitoring, and fish population estimates on Nanaimo area streams, including the Catstream. Toth and Associates have completed numerous other environmental monitoring, fish habitat and RAR assessments on the Catstream since 1993.

The Catstream supports populations of cutthroat and rainbow (steelhead) trout, coho salmon, pumpkinseed, three-spine stickleback, crayfish and western brook lamprey. One of two primary coho spawning areas on the Catstream is the section located adjacent to the subject property from Howard Avenue to the east end of Beaconsfield Road. The Catstream provides important over-wintering / rearing habitat for high numbers of juvenile coho migrants originating from the Chase River.

Stream habitat through the section of the Catstream adjacent to 265 Howard Avenue could be improved through restoration of the setback area with native vegetation, removal of one man-made and one natural partial barrier to upstream fish passage, and placement of additional spawning gravels.

## Section 2. Results of Detailed Riparian Assessment

### 2. Results of Detailed Riparian Assessment

Date:

Description of Water bodies involved (number, type)

Stream

Number of reaches

Reach #

#### Channel width and slope and Channel Type

Channel Width(m)		Gradient (%)	
starting point	<input type="text" value="2.0"/>	<input type="text" value="1.6"/>	I, <u>Steve Toth</u> , hereby certify that: a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i> ; b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Character Developments</u> ; c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and d) In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation.
	<input type="text" value="2.2"/>		
	<input type="text" value="1.8"/>		
	<input type="text" value="3.2"/>		
	<input type="text" value="3.4"/>		
	<input type="text" value="3.1"/>		
	<input type="text" value="3.9"/>		
	<input type="text" value="3.1"/>		
	<input type="text" value="2.8"/>		
	<input type="text" value="1.6"/>		
	<input type="text" value="2.5"/>		
Total: minus high /low	<input type="text" value="24.1"/>	<input type="text" value="1.6"/>	
mean	<input type="text" value="2.7"/>	<input type="text" value="1.6"/>	
Channel Type	<input type="checkbox" value="R/P"/>	<input type="checkbox" value="C/P"/>	
	<input checked="" type="checkbox" value="X"/>		

#### Site Potential Vegetation Type (SPVT)

	Yes	No	
SPVT Polygons	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Tick yes only if multiple polygons, if No then fill in one set of SPVT data boxes
Polygon No:	<input type="text" value="1"/>		Method employed if other than TR
SPVT Type	<input type="checkbox" value="LC"/>	<input type="checkbox" value="SH"/>	<input checked="" type="checkbox" value="TR"/>

#### Zone of Sensitivity (ZOS) and resultant SPEA

Segment No:  If two sides of a stream involved, each side is a separate segment. For all water bodies multiple segments occur where there are multiple SPVT polygons

LWD, Bank and Channel Stability ZOS (m)

Litter fall and insect drop ZOS (m)

Shade ZOS (m) max  South bank

**SPEA maximum**  (For ditch use table3-7)

I, Steve Toth, hereby certify that:

a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;

b) I am qualified to carry out this part of the assessment of the development proposal made by the developer Character Developments ;

c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and

d) In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation.

Figure 1. Survey Plan

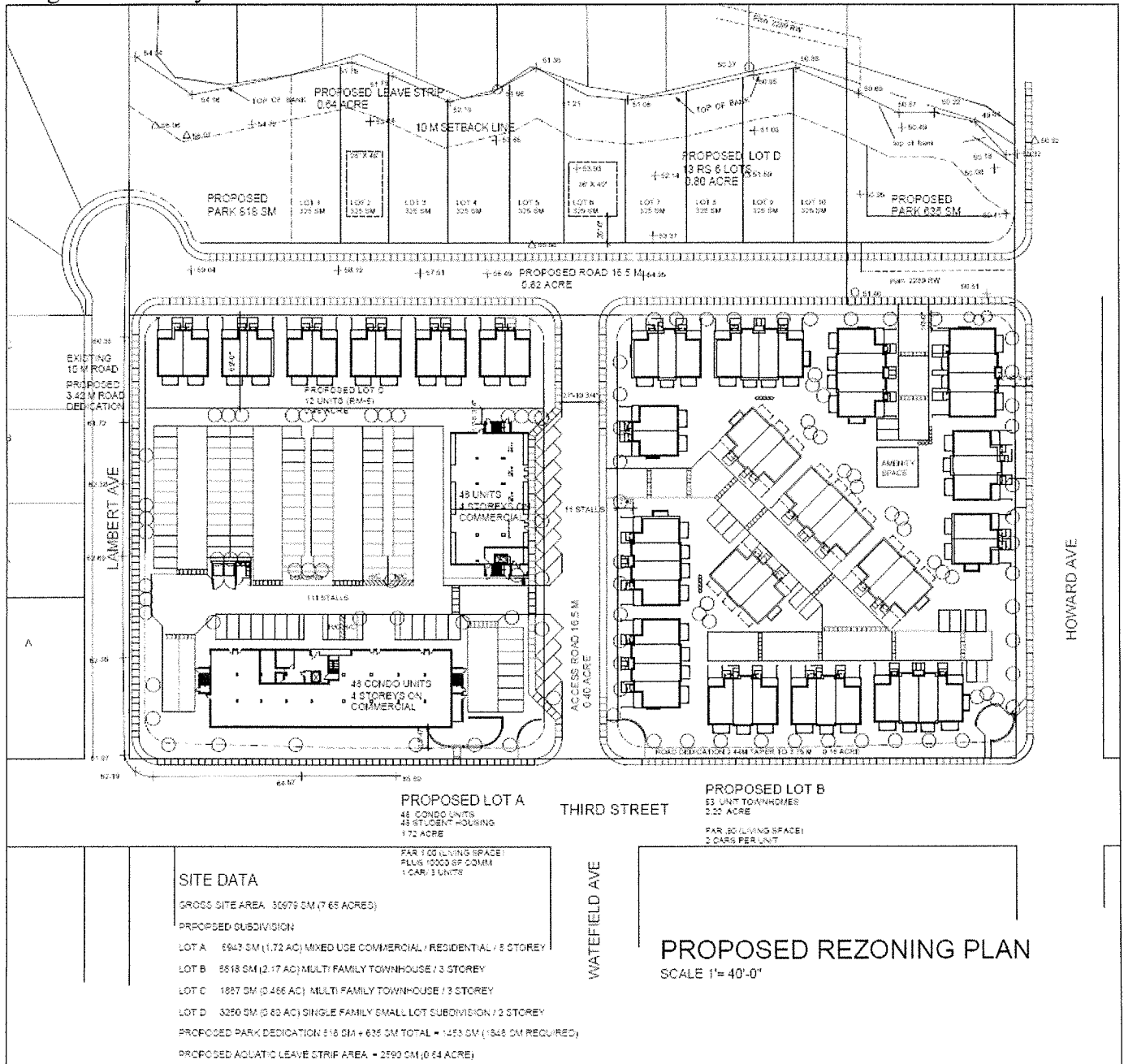
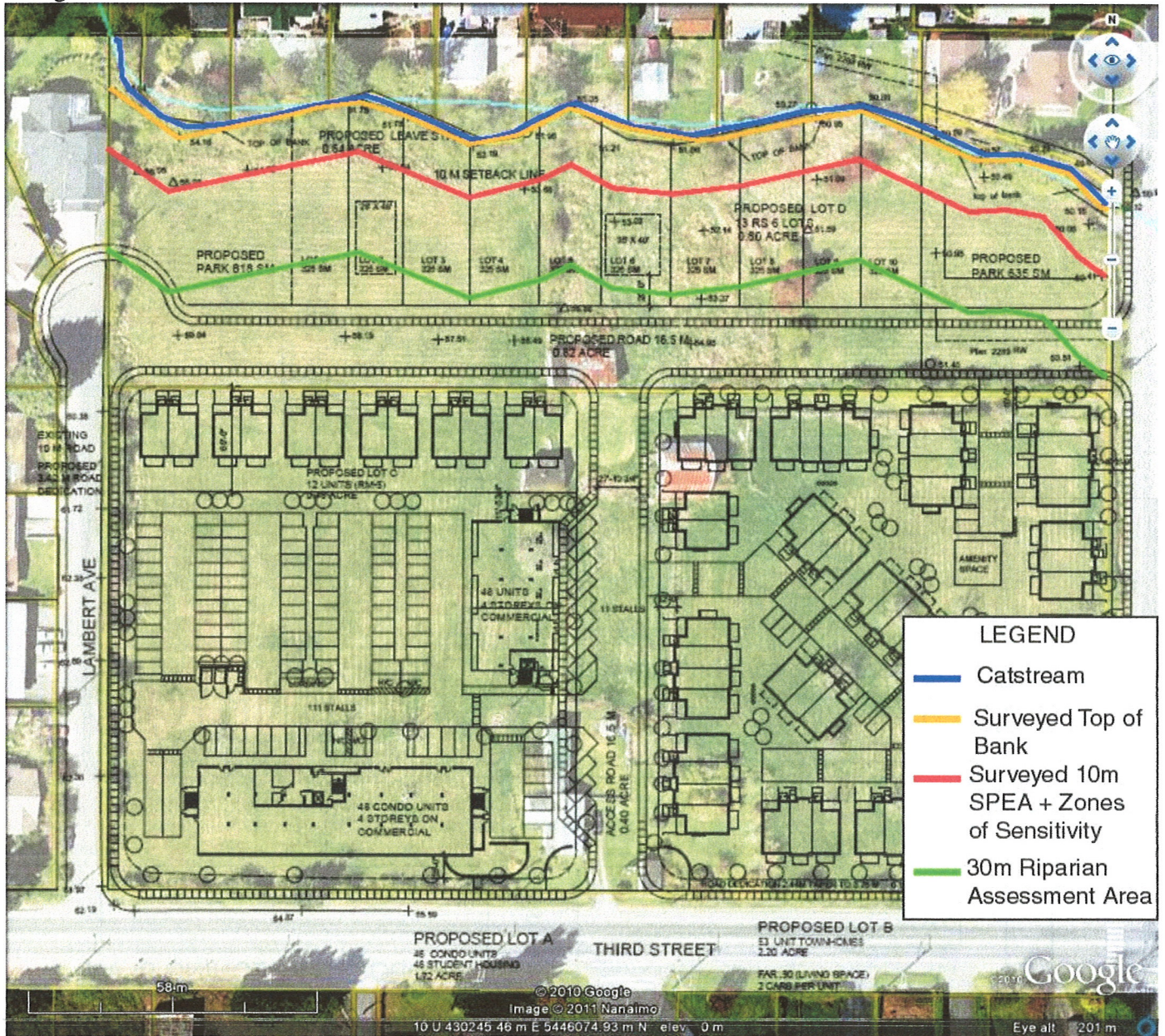


Figure 2. Setbacks and Features



### Section 4. Measures to Protect and Maintain the SPEA

1. Danger Trees	There were no obvious danger trees noted within the riparian assessment area during the survey.
<p>I, <u>Steve Toth</u>, hereby certify that:</p> <p>a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Character Developments</u>;</p> <p>c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	
2. Windthrow	The property is largely pasture lands running to the edge of the existing riparian area, therefore minimal clearing will be required by the proposed development. The development of the subject property will not increase windthrow potential within the SPEA.
<p>I, <u>Steve Toth</u>, hereby certify that:</p> <p>a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Character Developments</u>;</p> <p>c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	
3. Slope Stability	There are no designated steep slopes on the subject property and no obvious signs of slope instability were noted during the survey.
<p>I, <u>Steve Toth</u>, hereby certify that:</p> <p>a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Character Developments</u>;</p> <p>c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	
4. Protection of Trees	We recommend that the outer boundary of the 10m SPEA be fenced with high-vis snow fencing prior to any physical development of the property. We recommend that permanent measures for protecting the SPEA include low split-rail fencing of the SPEA boundary at the time of construction.
<p>I, <u>Steve Toth</u>, hereby certify that:</p> <p>a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Character Developments</u>;</p> <p>c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	
5. Encroachment	If the recommended measures for temporary and permanent fencing indicated in #4 above are followed, encroachment should not be an issue. The City of Nanaimo's zoning bylaw (No. 4000, 2010) requires a 15m setback from top of bank. No building, structure, road, parking lot, driveway, patio, games court or other impermeable surface shall be located within a leave strip.
<p>I, <u>Steve Toth</u>, hereby certify that:</p> <p>a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Character Developments</u>;</p> <p>c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	
6. Sediment and Erosion	The City of Nanaimo generally requires a Sediment and Erosion Management Plan for new developments. We recommend that as part of a

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Control	management plan staked in place and keyed-in silt fencing be installed along the boundary of the SPEA in conjunction with hi-vis snow fencing installation
<p>I, <u>Steve Toth</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Character Developments</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	
7. Stormwater Management	We recommend the use of Low Impact Development (LID) design principles for the proposed development.
<p>I, <u>Steve Toth</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Character Developments</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	
8. Floodplain Concerns (highly mobile channel)	There are no identified floodplain areas associated with the subject properties. The channel of the Catstream from Beaconsfield to Howard Avenue has remained unchanged since 1991 and is confined within defined banks.
<p>I, <u>Steve Toth</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Character Developments</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	

**Section 5. Environmental Monitoring**

As the proposed development includes construction we recommend that a qualified environmental monitor be contracted to aid and monitor implementation of the Sediment and Erosion Management Plan and to provide periodic monitoring of the development during the project's construction. A post-development report will be required to be submitted to the RAR electronic notification system within 6 months of the project's completion.



**Section 6. Photos**



Photograph 1. View downstream on the Catstream near the northwest end of the property.



Photograph 2. View upstream on the Catstream near the northwest end of the property.



Photograph 3. View of riparian area vegetation.



Photograph 4. View of riparian area vegetation in the northeast part of the property.

## Section 7. Professional Opinion

### Assessment Report Professional Opinion on the Development Proposal's riparian area.

Date

1. I/We Steve Toth

Please list name(s) of qualified environmental professional(s) and their professional designation that are involved in assessment.)

hereby certify that:

- a) I am/We are qualified environmental professional(s), as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
- b) I am/We are qualified to carry out the assessment of the proposal made by the developer Character Developments, which proposal is described in section 3 of this Assessment Report (the "development proposal"),
- c) I have/We have carried out an assessment of the development proposal and my/our assessment is set out in this Assessment Report; and
- d) In carrying out my/our assessment of the development proposal, I have/We have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation; AND

2. As qualified environmental professional(s), I/we hereby provide my/our professional opinion that:

- a)  if the development is implemented as proposed by the development proposal 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 in which the development is proposed, **OR**  
(Note: include local government flex letter, DFO Letter of Advice, or description of how DFO local variance protocol is being addressed)

- b)  if the streamside protection and enhancement areas identified in this Assessment Report are protected from the development proposed by the development proposal and the measures identified in this Assessment Report as necessary to protect the integrity of those areas from the effects of the development are implemented by the developer, 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 in which the development is proposed.