

23 March 2020

Brittany Lange, BSc, EPT  
Environmental Planner, Community Services  
Regional District Central Okanagan  
1450 K.L.O. Road  
Kelowna, BC, V1W 3Z4



Project No. 19-11

## **ENVIRONMENTAL ASSESSMENT ADDENDUM FOR LAKESIDE FILL REMOVAL AT 2677 WESTSIDE ROAD, WEST KELOWNA, BC**

Dear Brittany,

An environmental management plan (EMP) was created to provide information for provincial permitting to remove fill at 2677 Westside Road (Arsenault 2019<sup>1</sup>). The EMP provided a description of the project background, a description of habitat conditions, a list of guidance documents, a plan for how the fill would be removed, and environmental protection measures that would be required during fill removal. The EMP also included a summary of an environmental impact assessment in the form of a qualified professional checklist. Design details of habitat restoration were also included in the EMP. This report is an addendum to that report package. Included in this report is a summary of how the proposed works meet recommendations contained within the Rural Westside Official Community Plan (specifically appendices 2 and 6) and other information that is required in a development permit application for a Sensitive Aquatic Ecosystem Development Permit (DP).

### ***Project Update***

A meeting was held in Kamloops during 09 May 2019 at the Ministry of Forests, Lands and Natural Resource Operation, and Rural Development (FLNRO&RD). Staff from Ecosystems and Lands divisions were in attendance, as was Barbara Gordon (owner of 2677 Westside Road property) and Darryl Arsenault (Consultant). At that time, an agreement in principal was reached whereby FLNRO&RD agreed to go forward with a plan to remove part of the fill from Crown Land and create flood benches. The property owner was told that once the fill was removed the dock could still be accessed via a pier extending from the property line of 2677 Westside Road, and that a licence of occupation would be offered. Two email strings are attached that provide confirmation of these discussion points. The proposal to remove fill, create flood benches, and naturalize the Crown Land area was approved by FLNRO&RD via a Change Approval (Section 11) under the *Water Sustainability Act* on 06 March 2020

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<sup>1</sup> Arsenault Environmental Consulting Ltd. 2019. EMP for Fill Removal and Naturalization Plan, 2677 Westside Rd. A report prepared for Barbara Gordon.



(File A8005332). Arsenault discussed the license of occupation with Keith Weir (BC Lands Branch) during January 2020. Mr. Weir did not have issue with creating a license of occupation, as long as the works were done as proposed and that fencing and signage delineates Crown Land from private land. The existing dock is about 24 m long, including the access pier. A licence of occupation was in place for the dock but expired on 01 September 2014. That licence allowed for a dock that is 30 m long, which is 6 m longer than the existing dock. This length would not be suitable to connect to an upland elevation of at least 343.0 m (current best management practices (BMP)). Extending the pier by about 11 m (total of 35 m long) will fit within Private Moorage guidelines, which allows for a dock and pier of up to 42 m long. According to a letter provided to Barbara Gordon from Patrick Tobin on 03 August 2017, the dock now meets the requirements of a General Permission. It would still do so with an 11 m extension to the pier. The dock is approved under a general permission for the use of Crown Land for private moorage. A gravel walking trail no wider than 1.5 m will connect the pier to the residence, or lawn area (also a BMP).

About 450 m<sup>3</sup> will be removed from the lake to an upland area on the lot at 2677 Westside Road. The approximate location for disposal of the fill is provided on the attached marked-up figure. A photograph is also attached. The area for fill placement is in a Terrestrial Development Permit Area and partially in a Slope Development Permit Area. There are several reasons of choosing the location including: 1) the area is easily accessed from the existing driveway; 2) the area is not located upslope of habitable structures; 3) the area is not as steep as other potential areas; 4) there is only one small Douglas fir tree that would need to be destroyed in order to place the fill; 5) placing the fill above a road means that fill can be placed with reduced risk of rocks escaping down the slope during placement; and 6) placing fill above a road provides an opportunity to build a retaining system without disturbing terrestrially sensitive area and also provides a flat area from which to stage the fill placement. A ramp would have to be built in order for trucks to back up the slope to deposit the fill. Rock from the lake-fill removal area would be used to build a short wall (<1.2 m tall) below the fill area. An additional benefit of this choice for the fill removal area is that a fire truck turnaround can be built on the road at this location once fill placement is complete. This will help the current duplex building to meet existing fire truck turnaround bylaws.

Fill placement will require removal of one tree and slope stabilization to reduce risk of slope failure. Arsenault recommends that a geotechnical engineer is hired to provide professional advice and guidance on fill placement and securement. Topsoil, and organic material should be stripped to the sides and used to restore the area once fill placement is complete.

There is a large pile of logs stored at the area with the best potential for fill placement. Some of the logs can be used in the habitat restoration works on the flood benches. Those logs that are in stages of decay that would make them difficult to move can be spread back over the fill to aid in reclamation of the area to a natural state.

A portion of the fill placement area is on 2731 Westside Road. A letter of support may be required from the owner of that property before fill could be placed over the property boundary.

### **OCP Objectives**

The Rural Westside Official Community Plan Bylaw Number 1274 recommends protection and or restoration of riparian and shoreline areas. This project is a habitat restoration project whereby fill that was placed in Okanagan Lake will be removed and Kokanee spawning habitat, which was enhanced during 2007, will be expanded. Benches carved out above the Kokanee spawning habitat include:



- a beach bench that will be underwater during most times but during low water levels (about September to April)
- a low riparian flood bench that will be under water during average spring flood levels and will support plants that tolerate wet conditions;
- a riparian bench that would be flooded only during extreme flood events (such as that seen during spring 2017) and would support riparian trees and shrubs; and
- an upper riparian bench that would be typical of riparian areas that are located above extreme flood levels but close enough to the lake to be influenced by the lake's water table.

A fence will be installed to mark the property boundary. Signs will be posted on the fence every 10 m. These signs will state that "This Property is Crown Land. No dumping. No disturbance of vegetation or woody debris is allowed."

This expanded riparian area will be in addition to the riparian area that is already located between the house and Crown Land. That area is composed mainly of lawn and ornamental shrub beds that averages between 11 to 14 m distance between the house and the property boundary. The manicured nature of landscaping between the house and the property line does not provide much riparian value; however, the riparian benches will add from 2 to 7 m of riparian benches that are designed to become high-functioning riparian areas. This will mean that there would be from 13 to 20 m of riparian area between the house and the highwater mark of Okanagan Lake. This will be an improvement on the existing riparian conditions, which meets the objectives of the Consolidated Rural Westside Community Plan (2014).

Fill that was originally placed into the lake most likely came from alterations of the land on 2677 and 2731 Westside Road. It makes the most sense, environmentally, to keep the soil on the same properties. Not only would less carbon be burned by transporting the soil for a relatively short distance, costs would be reduced. The land area where fill would be placed is a shallow bowl that has been disturbed sometime between 2006 and 2009. The pile of tree trunks is likely from trees that were removed to build the duplex and house located at 2677 Westside Road. Those same tree trunks can be used in land reclamation as discussed above and in the initial environmental management plan.

### ***Habitat Restoration Bonding***

There will be 241 plants placed into the riparian benches to restore riparian function and provide naturalized habitat on Crown Land. Plants vary in size from sedge plugs to trees that will be over 1.5 m tall when planted. Layout and cluster density will be coordinated by a qualified environmental professional. There will be 34 trees, 127 shrubs and bushes, and 80 grasses/sedges. All disturbed areas above the beach areas will be restored with a riparian seed mix. The estimated cost to supply and install the plants and grasses is \$9,850. The bonding value would be 125% of the estimate, or \$12,310.

Logs and large rocks will be scattered over the flood benches. The estimated cost of supply and placement of these natural habitat features is about \$7,000. Arsenault understands that the habitat features are not required in the DP bonding. Similarly, soil relocation is part of the project but would not be a bondable item. Fill removal and habitat feature placement are requirements of the Provincial Section 11 Change Approval.

### ***Environmental Monitoring Bonding***

Given that the project is all about habitat restoration, environmental supervision and monitoring will need to be full-time. The grading and habitat restoration works may take about one week to complete during



the fish least-risk work window (June 1 to September 30). Initial grading work timing will be contingent on lake levels. If extreme flood levels are reached during late May and early June, site grading work may need to be deferred to late June or early July. Planting would best be done during late August or September. However, if plants are installed immediately following fill removal and creation of flood benches, then a temporary watering system may be required. Given that there is already an irrigation system that will be removed during the fill removal works, a temporary system that uses irrigation heads that will remain on the upland owner's property is a real possibility. The irrigation heads can be adjusted accordingly.

Estimated costs to conduct environmental monitoring during riparian restoration works are as follows.

Monitoring Time Period	Effort	Estimated Cost
EM during landscaping (2020)	2 days	\$2,000
Reporting (2020)	1 day	\$800
EM and reporting for 2 summers (2021 & 2022)	2 days (1 each year)	\$2,000
Total Costs		\$4,800

Environmental monitoring cost estimates are based on the assumption that fill removal would take about 5 days and landscaping would take about 2 days to complete. There is an allowance for one follow-up visit during fall 2020 to check on planting success and riparian bench stability. Follow-up visits in subsequent years would be for one day each, including reporting. If plant establishment is not meeting the 80% survival requirement set out in the Section 11 Change Approval, then an additional year of monitoring and reporting may be required. The total estimated cost of landscape monitoring during construction and for two years following is \$4,800. The bonding value would be 125% of the estimate, or \$6,000.

Arsenault has provided this information for the Client and for their agents and the RDCO. Any unauthorized use of this document is prohibited.

Kind regards,



Darryl Arsenault, MSc, RPBio  
Senior Biologist

CC: Barbara Gordon (property owner), Brian Robertson (FLNRO&RD)

Attach: Photo of Desired Fill Disposal Area  
Proposed fill location figure  
Email Records





Proposed fill placement location shown in orange polygon. Logs will be removed, top soil stripped, and these materials will be used to reclaim the site after fill placement.





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**RE: Meeting to discuss Crown Land fronting 2677  
Westside Road - File 3413216**

7 messages

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**Phillpotts, Mark G FLNR:EX** <Mark.Phillpotts@gov.bc.ca> 7 May 2019 at 13:43  
To: "Weir, Keith FLNR:EX" <Keith.Weir@gov.bc.ca>, Darryl A  
[REDACTED] "Ladyman, Jason FLNR:EX"  
<Jason.Ladyman@gov.bc.ca>, Barbara Gordon [REDACTED]  
Cc: "Tobin, Patrick J FLNR:EX" <Patrick.Tobin@gov.bc.ca>, "Robertson, Brian  
FLNR:EX" <Brian.Robertson@gov.bc.ca>

I'm really sorry everyone. Now that I have had a closer look at my calendar I see Brian and I are in 2 days of all staff meetings. I am not available until the following week.

Mark

Sent from my iPhone using Mail+ for Outlook<<http://taps.io/mailplus>>

From: Weir, Keith FLNR:EX  
Sent: 2019-05-07, 9:39 AM  
To: Phillpotts, Mark G FLNR:EX, Darryl A, Ladyman, Jason FLNR:EX, Barbara Gordon  
Cc: Tobin, Patrick J FLNR:EX, Robertson, Brian FLNR:EX  
Subject: RE: Meeting to discuss Crown Land fronting 2677 Westside Road -  
File 3413216

I have booked the Bluestem room for 2:00-3:00 on May 16.  
I will wait for you at the Front Counter BC reception area of our building.

From: Phillpotts, Mark G FLNR:EX  
Sent: May 2, 2019 12:05 PM  
To: Weir, Keith FLNR:EX [REDACTED]  
Cc: Tobin, Patrick J FLNR:EX <[Brian.Robertson@gov.bc.ca](mailto:Brian.Robertson@gov.bc.ca)>  
Subject: RE: Meeting to discuss Crown Land fronting 3413216

Hi Everyone,



The only time I have next week is on Thursday between 1:15 and 3:30. I have included Brian Robertson on this as he will likely attend the meeting.

Mark

From: Weir, Keith FLNR:EX  
Sent: Wednesday, May 1, 2019 9:14 AM  
To: Darryl A; Ladyman, Jason FLNR:EX; Phillpotts, Mark G FLNR:EX; Barbara Gordon  
Cc: Tobin, Patrick J FLNR:EX  
Subject: RE: Meeting to discuss Crown Land fronting 3413216

Hi Daryl

I can be available next week, except on Wednesday. Meeting in Kamloops works best for me.

From: Darryl A [REDACTED]  
[REDACTED]  
Sent: May 1, 2019 8:59 AM  
To: Weir, Keith FLNR:EX <[Keith.Weir@gov.bc.ca](mailto:Keith.Weir@gov.bc.ca)<mailto:Keith.Weir@gov.bc.ca>>; Ladyman, Jason FLNR:EX <[Jason.Ladyman@gov.bc.ca](mailto:Jason.Ladyman@gov.bc.ca)<mailto:Jason.Ladyman@gov.bc.ca>>; Phillpotts, Mark G FLNR:EX <[Mark.Phillpotts@gov.bc.ca](mailto:Mark.Phillpotts@gov.bc.ca)<mailto:Mark.Phillpotts@gov.bc.ca>>; Barbara Gordon [REDACTED] <[mailto:\[REDACTED\]](mailto:[REDACTED])>  
Cc: Tobin, Patrick J FLNR:EX <[Patrick.Tobin@gov.bc.ca](mailto:Patrick.Tobin@gov.bc.ca)<mailto:Patrick.Tobin@gov.bc.ca>>  
Subject: Re: Meeting to discuss Crown Land fronting 3413216

Please respond with your availability for next week.

Thanks,  
Darryl

On [REDACTED] wrote:

Hi  
Barbara Gordon has retained my services to assist in solving the issue of File 2677 Westside Road, Central Okanagan. I met with Patrick Tobin on April 1st. He recommended meeting in Kamloops with you guys to discuss and agree on an acceptable solution. Patrick indicated that there may be potential to create





flood benches and fencing to solve the occupation issue. At issue, is the presence of high value kokanee spawning habitat that could be destroyed by manipulation of the fill.

My suggestion is that we look at the option of creating flood benches that would be restored to riparian forest, while not interfering with spawning habitat. The dock would still be accessed by an extended walkway.

I understand that Jason is not back for a couple of weeks. Can we meet during the week of May 6th? Barb and I can travel to Kamloops to make it easier for you, unless you wish to meet onsite?

Thank you,

Darryl Arsenault, MSc, RPBio

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"Always Search for Innovative Solutions"

Arsenault Environmental Consulting Ltd.  
1059 Marathon Court, West Kelowna, BC, V1Z-3H9

p: 250-300-9206

e: [REDACTED]

w: [arsenaultenv.ca](http://arsenaultenv.ca) <<http://arsenaultenv.ca>>

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"Always Search for Innovative Solutions"

Arsenault Environmental Consulting Ltd.  
1059 Marathon Court, West Kelowna, BC, V1Z-3H9

p: 250-300-9206

e: [REDACTED]



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**Robertson, Brian FLNR:EX** <Brian.Robertson@gov.bc.ca> 7 May 2019 at 14:57

To: "Phillpotts, Mark G FLNR:EX" <Mark.Phillpotts@gov.bc.ca>, "Weir, Keith FLNR:EX" <Keith.Weir@gov.bc.ca>, Darryl A [REDACTED], "Ladyman, Jason FLNR:EX" <Jason.Ladyman@gov.bc.ca>, Barbara Gordon [REDACTED]

Cc: "Tobin, Patrick J FLNR:EX" <Patrick.Tobin@gov.bc.ca>

I think there may be some confusion as to which Thursday the meeting was to be held. I was under the impression that it was Thursday the 9<sup>th</sup>. Keith in your email you reference a boardroom booked for the 16<sup>th</sup>. Not sure if I am

correct with the meeting being this Thursday but if Keith cannot get a meeting room before the 16<sup>th</sup> we will have to reschedule as neither Mark nor I are available on the 15<sup>th</sup> & 16<sup>th</sup>.

Brian

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**From:** Phillpotts, Mark G FLNR:EX  
**Sent:** Tuesday, May 7, 2019 1:43 PM  
**To:** Weir, Keith FLNR:EX; Darryl A; Ladyman, Jason FLNR:EX; Barbara Gordon  
**Cc:** Tobin, Patrick J FLNR:EX; Robertson, Brian FLNR:EX  
**Subject:** RE: Meeting to discuss Crown Land fronting [2677 Westside Road](#) - File 3413216

I'm really sorry everyone. Now that I have had a closer look at my calendar I see Brian and I are in 2 days of all staff meetings. I am not available until the following week.

Mark



Sent from my iPhone using [Mail+ for Outlook](#)

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**From:** Weir, Keith FLNR:EX

[Quoted text hidden]

[Quoted text hidden]

On [REDACTED] wrote:

[Quoted text hidden]

[Quoted text hidden]

[Quoted text hidden]

w: [arsenaultenv.ca](http://arsenaultenv.ca)

[Quoted text hidden]

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**Darryl Arsenault** [REDACTED] 7 May 2019 at 15:36

To: "Robertson, Brian FLNR:EX" <Brian.Robertson@gov.bc.ca>

Cc: "Phillpotts, Mark G FLNR:EX" <Mark.Phillpotts@gov.bc.ca>, "Weir, Keith FLNR:EX" <Keith.Weir@gov.bc.ca>, "Ladyman, Jason FLNR:EX"

<Jason.Ladyman@gov.bc.ca>, Barbara Gordon [REDACTED],

"Tobin, Patrick J FLNR:EX" <Patrick.Tobin@gov.bc.ca>

You are right Brian. The 9th has been the plan all along and was the date in the calendar invite. I hope that still works for you Mark?

See you at 2:00 this Thursday

Thanks

Darryl

Sent from my iPhone. Arsenault Environmental Consulting Ltd.

[Quoted text hidden]

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**Phillpotts, Mark G FLNR:EX** <Mark.Phillpotts@gov.bc.ca> 8 May 2019 at 09:29

To: Darryl Arsenault [REDACTED], "Robertson, Brian FLNR:EX" <Brian.Robertson@gov.bc.ca>

Cc: "Weir, Keith FLNR:EX" <Keith.Weir@gov.bc.ca>, "Ladyman, Jason FLNR:EX" <Jason.Ladyman@gov.bc.ca>, Barbara Gordon [REDACTED],

"Tobin, Patrick J FLNR:EX" <Patrick.Tobin@gov.bc.ca>

Yes that will work, sorry for the confusion.

Mark

[Quoted text hidden]



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**Weir, Keith FLNR:EX** <Keith.Weir@gov.bc.ca>

8 May 2019 at 12:11

To: Darryl Arsenault [REDACTED], "Robertson, Brian FLNR:EX" <Brian.Robertson@gov.bc.ca>  
Cc: "Phillpotts, Mark G FLNR:EX" <Mark.Phillpotts@gov.bc.ca>, "Ladyman, Jason FLNR:EX" <Jason.Ladyman@gov.bc.ca>, Barbara Gordon [REDACTED], "Tobin, Patrick J FLNR:EX" <Patrick.Tobin@gov.bc.ca>

Sorry for the confusion everyone. I have the Mariposa room booked for 1:30, Thursday **May 9**. I will meet the out of office folks at FCBC to let you up stairs.

Keith

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**From:** Darryl Arsenault [REDACTED]  
**Sent:** May 7, 2019 3:37 PM



[Quoted text hidden]

[Quoted text hidden]

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**Darryl A** <darryl.arsenault@gmail.com> 24 May 2019 at 11:03  
To: "Weir, Keith FLNR:EX" <Keith.Weir@gov.bc.ca>, "Ladyman, Jason FLNR:EX" <Jason.Ladyman@gov.bc.ca>, "Robertson, Brian FLNR:EX" <Brian.Robertson@gov.bc.ca>, "Phillpotts, Mark G FLNR:EX" <Mark.Phillpotts@gov.bc.ca>  
Cc: Barbara Gordon [REDACTED]

Good morning,

Thanks for meeting with Barbara Gordon and I on May 9, 2019. In summary, we discussed the potential for partial removal of fill fronting 2677 Westside Road. We discussed the concept to create flood benches on the Crown Land by removing some fill and naturalize the area through the addition of coarse woody debris and native plants. Topsoil would be stripped and stored to help with restoration efforts. The area would be fenced to inhibit encroachment onto Crown Land. The dock would be allowed to connect through the installation of an elevated pathway or pier.

A Section 11 Change Approval will be required in order to do the works.

There was discussion about whether a licence of occupation would be required in order to leave some of the fill in place.

The meeting left off with an action item from Brian and Mark to get back to Barbara and I on their recommended plan to move forward. Please let me know if you have any feedback.

Thanks again for meeting with us and I look forward to working with you all to resolve the situation.

Kind regards,  
Darryl Arsenault, MSc, RPBio

[Quoted text hidden]

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**Darryl A** [REDACTED] 17 June 2019 at 15:44  
To: "Weir, Keith FLNR:EX" <Keith.Weir@gov.bc.ca>, "Ladyman, Jason FLNR:EX" <Jason.Ladyman@gov.bc.ca>, "Robertson, Brian FLNR:EX" <Brian.Robertson@gov.bc.ca>, "Phillpotts, Mark G FLNR:EX" <Mark.Phillpotts@gov.bc.ca>  
Cc: Barbara Gordon [REDACTED]

Hi guys

This email is a reminder to respond to the above email and action items identified at our meeting last month. This is a very important matter for Mrs. Gordon.

Thank you,  
Darryl

[Quoted text hidden]



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## Westside Road Infill - Gordon

3 messages

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**Robertson, Brian FLNR:EX** <Brian.Robertson@gov.bc.ca> 25 July 2019 at 17:50  
To: Darryl Arsenault [REDACTED], "Weir, Keith FLNR:EX"  
<Keith.Weir@gov.bc.ca>, "Ladyman, Jason FLNR:EX"  
<Jason.Ladyman@gov.bc.ca>, "Phillpotts, Mark G FLNR:EX"  
<Mark.Phillpotts@gov.bc.ca>



Darryl, although a little more discussion may need to take place between Ecosystem staff and Lands staff it would appear that we are close to coming to a resolution with respect to the Gordon infill. I think that at this time it would be reasonable to move forward with a design for the restoration of the infill. Internally Ecosystem staff have agreed that we would, in this particular circumstance, allow a partial removal of the remaining fill, versus the removal of the entire trespass. Although I feel that I have seen a conceptual plan that you put together I cannot seem to find a copy, perhaps it was something you brought to the Kamloops meeting, or I have misplaced it. During the Kamloops meeting you described a plan that involved pulling back the fill to a specified location/elevation and in so doing creating what you referred to as flood benches. If you could please forward a design and an environmental management plan for the project I believe that we can move forward in addressing the issue.

If you would like to forward a rough draft, or a conceptual plan to make sure we are all in agreement with the perspective design, that might be a good first step. Aside from the restoration works I believe that what Mrs. Gordon will be offered is a License of Occupation, this would cover the area of trespass. If Mrs. Gordon or yourself would like additional information concerning the ramifications of the license I would suggest that she/you speak with Keith Weir.

If you have any questions from an Ecosystems perspective feel free to contact either myself or Mark Phillpotts. Thanks

Brian

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**Darryl A** [REDACTED]

31 July 2019 at 08:36

To: Barbara Gordon [REDACTED]

Hi Barbara

I have been away on holidays. The message below came in while I was away. This appears to be good news in that it follows the plan that we discussed at the meeting.

I can now get going on creating this plan. It will need a topographic survey. Please contact AllTerra Land Survey to arrange a contract with them. I can coordinate their survey once they are retained.

This is a very busy time of year for me but I will fit this in.

Cheers,

Darryl

[Quoted text hidden]

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*"Always Search for Innovative Solutions"*

Arsenault Environmental Consulting Ltd.  
1059 Marathon Court, West Kelowna, BC, V1Z-3H9  
p: 250-300-9206  
e: [REDACTED]



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**Barbara Gordon** [REDACTED]

31 July 2019 at 10:17

To: Darryl A [REDACTED]

Hi Darryl,

I am traveling today but will contact them tomorrow morning. Do you have contact information for them?

Barb

Get [Outlook for iOS](#)

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**From:** Darryl A [REDACTED]

**Sent:** Wednesday, July 31, 2019 9:36:36 AM

**To:** Barbara Gordon [REDACTED]

**Subject:** Fwd: Westside Road Infill - Gordon

[Quoted text hidden]