

From: [Jepsen, Brian](#) TRAN:EX
To: [Retzer, David](#) TRAN:EX
Subject: RE: 3 Quotes: Video Equipment
Date: Thursday, February 5, 2015 3:10:54 PM

Thanks

From: Retzer, David TRAN:EX
Sent: Thursday, February 5, 2015 2:58 PM
To: Jepsen, Brian TRAN:EX
Subject: RE: 3 Quotes: Video Equipment

I do a lot of project photography and video and this will be used to increase the types and quality of shots I can get. A lot of our projects are large in scale, be it an intersection\interchange or a 3km+ section of road. This makes it possible to show a lot more in a photograph or video that I can by standing on the ground with a camera. For many of our larger projects at the planning stages or at the end we will get aerial shots by chartering a helicopter to show the location, geography or completed works. The drone can work well on its own for some of these shots, providing good value for money. It can also be used quickly in the field to view things such as slides, rockfall, or other natural events. Additionally it can be pre-programmed via GPS to fly in a set path before launching. This opens up a number of possibilities and can also be used to capture shots that may be out of reach.

David Retzer | 250-828-4260

From: Jepsen, Brian TRAN:EX
Sent: Thursday, February 5, 2015 2:44 PM
To: Retzer, David TRAN:EX
Subject: RE: 3 Quotes: Video Equipment

Dave, can you give me a one paragraph explanation of what we want this for, what uses will it have?

From: Retzer, David TRAN:EX
Sent: Thursday, February 5, 2015 1:25 PM
To: Jepsen, Brian TRAN:EX
Subject: FW: 3 Quotes: Video Equipment

David Retzer | 250-828-4260

From: Retzer, David TRAN:EX
Sent: Thursday, February 5, 2015 1:10 PM
To: Koehl, Debbie TRAN:EX
Subject: 3 Quotes: Video Equipment

Futureshop is \$1529

<http://www.futureshop.ca/en-CA/product/dji-dji-phantom-2-vision-plus-quad-copter-with-camera-dji-p2v-v3-0-white-dji-p2v-v3-0/10357856.aspx?path=0fcc2e3a553816b59ffc7c947c184bcen02>

Amazon is \$1650

http://www.amazon.ca/DJI-Phantom-Vision-V3-0-GimbalVideo/dp/B00P309MZ6/ref=sr_1_2?ie=UTF8&qid=1423169648&sr=8-2&keywords=dji+phantom+2+vision+plus

Best Buy is \$1529 as well

<http://www.bestbuy.ca/en-CA/product/dji-dji-phantom-2-vision-plus-quad-copter-with-camera-dji-p2v-v3-0-white-dji-p2v-v3-0/10357856.aspx?path=3ecd583f2d1ca3440868d3bba412ef95en02>

David Retzer | 250-828-4260

From: Retzer, David TRAN:EX

Sent: Tuesday, February 3, 2015 10:39 AM

To: Koehl, Debbie TRAN:EX

Subject: Video Equipment

Hi Deb,

Here is what we should get, if possible:

<http://www.futureshop.ca/en-CA/product/dji-dji-phantom-2-vision-plus-quad-copter-with-camera-dji-p2v-v3-0-white-dji-p2v-v3-0/10357856.aspx?path=0fcc2e3a553816b59ffc7c947c184bcen02>

This one has a built in camera designed for the drone, better controls, wireless range and higher quality still photos. The go pro based unit would be only slightly cheaper but harder to use and would require assembling more parts.

We could order this in 2 payments, perhaps?

Also it'd be good to have this (only \$21 and offers good protection):

<http://www.futureshop.ca/en-CA/product/dji-dji-phantom-2-propeller-guard-white-dji-p2v-prop-guard/10361440.aspx?path=073d65f916280dad7945f96426e18329en02>

David Retzer | Programming and Project Development | MoT Southern Interior Region | T: 250-828-4260 | C S.17 | david.retzer@gov.bc.ca |

Fattore, Miranda J TRAN:EX

From: Harbicht, Terry N TRAN:EX
Sent: Tuesday, February 24, 2015 10:19 AM
To: Turner, Jim A TRAN:EX
Cc: Retzer, David TRAN:EX
Subject: FW: Drone Pilot Project

FYI. Interesting, this happened right after your talk to us. You may want to talk to Dave about his drone.

Terry N. Harbicht, P. Eng
Manager, Geotechnical and Materials Engineering
Southern Interior Region
Ministry of Transportation and Infrastructure
447 Columbia Street, Kamloops, BC, V2C 2T3
Telephone: Office (250) 371-3956, Fax (250) 828-4083, Cell s.17
email: Terry.Harbicht@gov.bc.ca

From: Retzer, David TRAN:EX
Sent: Monday, February 23, 2015 2:43 PM
To: Harbicht, Terry N TRAN:EX; Dacho, Frank H TRAN:EX; Persello, Brent L TRAN:EX
Subject: Drone Pilot Project

Good afternoon,

I am being provided with a UAV/drone for use in video and photography projects. It will be a pioneering project in proving the usefulness of these devices. I plan to use it for construction footage, and pre-project development, before and after shots, etc. But also I see potential in assisting your departments as well.

If you have any ideas of how you could use my services, I'd be happy to help, and it would provide me with good training as well.

There are some restrictions on how it can be used (not within 9km of an airport, or over 300ft high, etc). But this still gives us a lot of possible applications. It can be programmed with GPS waypoints to follow a set path.

The drone arrives this week and after I learn to fly it and get the insurance requirements in order I'll be looking for real-world experience.

Let me know. Thanks!

David Retzer | Programming and Project Development | MoT Southern Interior Region | T: 250-828-4260 | C s.17
S.1 | david.retzer@gov.bc.ca |

From: Retzer, David TRAN:EX
To: Koehl, Debbie TRAN:EX
Subject: RE: Your order #342545083 with futureshop.ca
Date: Thursday, February 19, 2015 9:36:00 AM
Attachments: <https://www-ssl.futureshop.ca/order/orderdetails.pdf>

Sorry I thought this had the cost. Try this PDF instead

David Retzer | 250-828-4260

From: Koehl, Debbie TRAN:EX
Sent: Thursday, February 19, 2015 9:18 AM
To: Retzer, David TRAN:EX
Subject: RE: Your order #342545083 with futureshop.ca

Thanks Dave, is there something that shows the cost?

Regards,

Deb

From: Retzer, David TRAN:EX
Sent: Thursday, February 19, 2015 9:11 AM
To: Koehl, Debbie TRAN:EX
Subject: FW: Your order #342545083 with futureshop.ca
From: Futureshop Web Support [<mailto:noreply@futureshop.ca>]
Sent: Thursday, February 19, 2015 9:07 AM
To: Retzer, David TRAN:EX
Subject: Your order #342545083 with futureshop.ca

Future Shop



Your Order Has Been Received

Hi Debbie,

We have received your order, and we're working hard to get it to you as soon as we can. Please note that your method of payment will not be charged until your order has been shipped.

Once your item(s) have been shipped we'll send you an email with tracking information. You can also check the [status of your order](#) any time online.

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Please do not respond to this email. If you need further assistance please visit our [Contact Us](#) page.

Please keep this email for your future reference.

Order Details

Item name	Quantity
LaTrax 650mah Lipo Battery	1
LaTrax Alias Quadcopter - Red	1

More information

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- » [And more...](#)

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Order **#1195446** placed 02/26/2015 04:26 PM (UTC-5)

Current Status: **Authorized** as of 02/26/2015 04:26 PM (UTC-5)

Please make note of your order number for future use, or in the event that you need to contact us regarding your order.

[Place a new order with the same products as this order](#)

Your Information

Bill To

Debbie Koehl
447 Columbia Street
Kamloops, BC
Canada V2C 2T3

Ship To

Debbie Koehl
447 Columbia Street
Kamloops, BC
Canada V2C 2T3

Payment

Master Card
S.17
\$269.83

Ship Via: Expedited
Provinces

Order Summary

Product	Ordered	Invoiced	Shipped	Unit Price	Sub Total
GOPROFESSIONAL PHANTOM 2 VISION CASE	1	0	0	\$229.99	\$229.99
DJI PHANTOM 2 PROP GUARD (4 PCS)	1	0	0	\$26.99	\$26.99

Sub Total: \$256.98

Shipping: \$0.00

Promotions: \$0.00

GST \$12.85

Total: \$269.83

Order History

Date

2/26/2015 4:26:16 PM

State

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iPhone 6 16GB \$149.99 after trade-in.*

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Change Password
Change Email Address

Error. Please check highlighted fields below for accuracy.
Number of errors: [errorCount].

[Back to referring page](#)**Order Details**Order Number: **342545083**

Order Date: February 19, 2015, 08:40:02 (PST)

Order Status: **In Progress****Shipping****Shipping Address**

David Retzer
- 342-447 Columbia Street
Kamloops, BC , V2C 2T3
Canada
Phone **S. 17**

Order Summary	\$184.98
Shipping:	No charge
Subtotal:	\$184.98
Environmental Handling Fees:	\$0.40
PST/QST:	\$12.98
GST:	\$9.27
Order Total:	\$207.63

Shipment 1 Scheduled for Standard Delivery**Qty. Product Description Total****LaTrax 650mah Lipo Battery**

1 Item Status: In Stock \$14.99

[Review & Rate Product](#)**LaTrax Alias Quadcopter - Red**

Item Status: In Stock

Customer Rating:
1 \$169.99

★★★★★ 5.0 /5

(Based on 1 votes)

[Review & Rate Product](#)**Environmental Handling Fee for LaTrax Alias Quadcopter - Red**

1 More Information \$0.40

Payment Information |

Credit Card Information		Gift Card Information
s.17	Billing Address Debbie Koehl 342-447 Columbia Street Kamloops, BC, V2C 2T3, Canada 250-828-4220	Charged \$207.63
Promotional Codes Information		N/A
N/A		

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From: [Koehl, Debbie TRAN:EX](#)
To: [Jepsen, Brian TRAN:EX](#); [Retzer, David TRAN:EX](#)
Subject: Drone approved
Date: Wednesday, February 18, 2015 9:23:18 AM

Good morning Brian (and Dave), Mike has approved the purchase of the UAV's.
As previously discussed, we would like to purchase 2 units, 1 that will be fitted with a camera and the 2nd to be used as a practice unit, please go ahead with the transactions.
Also, please inquire with Shelly Keddy about the Transport Canada requirement to hold "liability insurance covering risks of public liability at the levels described in subsection 806.02 (8) of the Canadian Aviation Requirements and in any case shall have no less than \$100,000 in liability insurance coverage pertaining to the operation of the UAV system".

Thank you.

DEB KOEHL | REGIONAL MANAGEMENT ADMINISTRATOR

MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE | SOUTHERN INTERIOR REGION | (250) 828-4220

From: [Harbicht, Terry N TRAN:EX](#)
To: [Kneale, Tom TRAN:EX](#); [Mitchell, Allan J TRAN:EX](#); [Panton, Brad TRAN:EX](#); [Richards, Bill TRAN:EX](#); [Sandusky, Julie TRAN:EX](#); [Snyder, John R TRAN:EX](#); [Tracz, David TRAN:EX](#); [Yonin, Daryn W TRAN:EX](#)
Cc: [Retzer, David TRAN:EX](#)
Subject: FW: Drone Pilot Project
Date: Monday, February 23, 2015 4:04:18 PM

All staff:

Please see offer from Dave Retzer regarding the drone pilot project. Please take advantage of his kind offer, but please do not swamp him, as I know most of you will want this service ASAP.

Terry N. Harbicht, P. Eng
Manager, Geotechnical and Materials Engineering
Southern Interior Region
Ministry of Transportation and Infrastructure
447 Columbia Street, Kamloops, BC, V2C 2T3
Telephone: Office (250) 371-3956, Fax (250) 828-4083, Cell s.17
email: Terry.Harbicht@gov.bc.ca

From: Retzer, David TRAN:EX
Sent: Monday, February 23, 2015 2:43 PM
To: Harbicht, Terry N TRAN:EX; Dacho, Frank H TRAN:EX; Persello, Brent L TRAN:EX
Subject: Drone Pilot Project

Good afternoon,

I am being provided with a UAV/drone for use in video and photography projects. It will be a pioneering project in proving the usefulness of these devices. I plan to use it for construction footage, and pre-project development, before and after shots, etc. But also I see potential in assisting your departments as well.

If you have any ideas of how you could use my services, I'd be happy to help, and it would provide me with good training as well.

There are some restrictions on how it can be used (not within 9km of an airport, or over 300ft high, etc). But this still gives us a lot of possible applications. It can be programmed with GPS waypoints to follow a set path.

The drone arrives this week and after I learn to fly it and get the insurance requirements in order I'll be looking for real-world experience.

Let me know. Thanks!

David Retzer | Programming and Project Development | MoT Southern Interior Region | T: 250-828-4260 | C s.17 | david.retzer@gov.bc.ca |

From: INSURANCE and BONDS TRAN:EX
To: Retzer, David TRAN:EX
Subject: RE: UAV Liability Insurance
Date: Tuesday, February 24, 2015 9:57:52 AM

Hey David...I booked us for a telephone conference this morning. Is your office number the appropriate number? Or if you like you can give us a call on Jenny Pleice's line at (250)387-7580. Thanks!

Kristy O'Brien

Insurance and Bonds Officer
Ministry of Transportation and Infrastructure
Corporate Procurement and Risk Management
PO Box 9850, Stn Prov Gov, Victoria BC V8W 3E6
Tel (250)356-9774
Fax (250)356-9724

Courier to: 4D – 940 Blanshard St, Victoria BC V8W 3E6

*The Ministry will now accept scanned Ministry Certificates of Insurance as equivalent to original but the certificates **MUST** be emailed directly from an authorized representative of the insurer. A scanned version from the contractor or any other source is **NOT** considered an original.*

MINISTRY CERTIFICATE OF INSURANCE: <http://www.th.gov.bc.ca/BCHighways/contracts/insurance/insurance.htm>

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From: Retzer, David TRAN:EX
Sent: Monday, February 23, 2015 2:09 PM
To: Keddy, Shelley M TRAN:EX; INSURANCE and BONDS TRAN:EX
Cc: Koehl, Debbie TRAN:EX
Subject: RE: UAV Liability Insurance
Okay. Thanks very much for directing my email to the appropriate party.

David Retzer | 250-828-4260

From: Keddy, Shelley M TRAN:EX
Sent: Monday, February 23, 2015 1:25 PM
To: INSURANCE and BONDS TRAN:EX
Cc: Koehl, Debbie TRAN:EX; Retzer, David TRAN:EX
Subject: RE: UAV Liability Insurance

Hi,

I think the below question will be better answered by Insurance and Bonds.
Shelley

From: Retzer, David TRAN:EX
Sent: Friday, February 20, 2015 11:31 AM
To: Keddy, Shelley M TRAN:EX
Cc: Koehl, Debbie TRAN:EX
Subject: FW: UAV Liability Insurance
Hi Shelley,

I'm looking for some assistance in fulfilling some insurance requirements. We've purchased a drone with a video camera for use in capturing footage as required.

I am aware of the Transport Canada regulations for drones under 2kg, used for work purposes. As

such we need to hold \$100,000 in liability coverage with this unit, as described below.
Can you let me know what we need to do to make sure we're covered? I will be the principal operator but it's likely other staff (geotechnical engineers, etc) may be trained to use it at a later date, so we'd like to have the policy attached to the unit if possible.

From: Koehl, Debbie TRAN:EX

Sent: Wednesday, February 18, 2015 9:23 AM

To: Jepsen, Brian TRAN:EX; Retzer, David TRAN:EX

Subject: Drone approved

Good morning Brian (and Dave), Mike has approved the purchase of the UAV's.

As previously discussed, we would like to purchase 2 units, 1 that will be fitted with a camera and the 2nd to be used as a practice unit, please go ahead with the transactions.

Also, please inquire with Shelly Keddy about the Transport Canada requirement to hold "liability insurance covering risks of public liability at the levels described in subsection 806.02 (8) of the Canadian Aviation Requirements and in any case shall have no less than \$100,000 in liability insurance coverage pertaining to the operation of the UAV system".

Thank you.

DEB KOEHL | REGIONAL MANAGEMENT ADMINISTRATOR

MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE | SOUTHERN INTERIOR REGION | (250) 828-4220

From: auto-confirm@amazon.ca
To: [Retzer, David TRAN:EX](#)
Subject: Your Amazon.ca order of "DJI Phantom 2 Vision+ V3.0..." and 1 more item
Date: Thursday, February 19, 2015 8:27:15 AM

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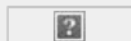
Order Confirmation

Order #701-7255651-6148237

Hello David Retzer,

Thank you for shopping with us. We'll send a confirmation once your items have shipped. Your order details are indicated below. If you would like to view the status of your order or make any changes to it, please visit [Your Orders](#) on Amazon.ca.

Your estimated delivery date is:
Friday, February 27, 2015
A signature is required at delivery
Your shipping speed:
FREE Super Saver Shipping



Your order will be sent to:
David Retzer
342-447 Columbia Street
Kamloops, British Columbia V2C 2T3
Canada

Order Details

Order #701-7255651-6148237

Placed on Thursday, February 19, 2015



DJI Battery for Phantom 2 and Phantom 2
Vision (White)
Beyond Solutions; Electronics
Sold by Amazon.com.ca, Inc.



CDN\$ 152.98



DJI Phantom 2 Vision+ V3.0 Quadcopter with
FPV HD Video Camera and 3-Axis
GimbalVideo Camera (White)
Electronics
Sold by Amazon.com.ca, Inc.



CDN\$ 1,499.99

Item Subtotal:	CDN\$ 1,652.97
Shipping & Handling:	CDN\$ 0.00
Estimated Tax (GST/HST):	CDN\$ 82.65
Estimated Tax (PST/QST):	CDN\$ 115.71
Order Total:	CDN\$ 1,851.33

To learn more about ordering, go to [Ordering from Amazon.ca](#).
If you want more information or need more assistance, go to [Help](#).

We hope to see you again soon!

Amazon.ca

This email was sent from a notification-only address that cannot accept incoming email. Please do not reply to this message.



Fattore, Miranda J TRAN:EX

From: Ben Van Lare <ben@raecon.ca>
Sent: Wednesday, March 11, 2015 1:33 PM
To: Turner, Jim A TRAN:EX
Subject: UAV Services

Hey Jim,

Its been a while since we last spoke, just wanted to reconnect with you and see if there is any UAV work that we could do for you this upcoming spring.

I know the last time we spoke you mentioned coming to Vancouver where we could meet, we are still interested in that whenever you have the opportunity to make it out. On a side note our power line crews are working with some Ministry of Transportation crews doing rock scaling in Hope over the next few weeks. This could be a great opportunity for you to see the drone in action doing scaling inspections.

Let me know your thoughts and look forward to hearing from you.

Cheers,
Ben

Ben Van Lare

Raecon Industries
5833 180th Street
Surrey, BC, V3S 4L2

Cell: 604 222-1111
Email: ben@raecon.ca
www.raeconindustries.com

Fattore, Miranda J TRAN:EX

From: Retzer, David TRAN:EX
Sent: Tuesday, March 31, 2015 11:21 AM
To: Turner, Jim A TRAN:EX
Subject: RE: As Requested: Drone Info

Yes, there are different rules for using it recreationally vs for work purposes. And also weight also comes into play. I'm assuming your survey drones would be over the 2kg threshold (mine is 1.5kg)

I am able to use it for work purposes under the exemption. Which would be fairly restrictive for the average person who is looking to build a commercial enterprise. IE real estate. But I can be choosy with which projects I visit and ensure they are far enough away to meet the requirements.

http://www.tc.gc.ca/eng/civilaviation/standards/general-recavi-uav-2265.htm?WT.mc_id=1zfhj#safety

Here is the flowchart and general SFOC exception requirements that I follow:

http://www.tc.gc.ca/media/documents/ca-standards/Infographic_Permission_to_fly_a_UAV_Web_English.pdf

David Retzer | 250-828-4260

From: Turner, Jim A TRAN:EX
Sent: Tuesday, March 31, 2015 10:15 AM
To: Retzer, David TRAN:EX
Subject: RE: As Requested: Drone Info

I'll be looking at setting guidelines down the road for use with survey applications for UAV's either in house, as you are now doing, or via Survey companies bidding on projects for design data acquisition, or possibly construction contractors, using them in our Highway corridors.

I need to do more research, but I think there are slightly different rules if using a UAV as a commercial enterprise, and that used to include the SFOC within Transport Canada rules.

You have looked at the current exemption requirement's, so that seems to cover your current applications fine, but I'm not sure how that would work when we start mining Photogrammetry data (rather than just video and photographs) from the UAV photos, and using them for things like survey grade data acquisition, since that data gets processed for Engineering design etc and is paid for.

Not a show stopper, just something for me to consider on the survey data front, I also believe that we won't need the SFOC for our field survey crews, but I'll have to double check.

And I've checked out the DJI link, as well as chatted with Jenny Pleice, who signed the Proof of Insurance document, as there will be more questions down the road when we try to implement a UAV for survey.

In essence, I am quite happy you have gone this route, and I will be supporting whatever you decide to use the UAV for. The corporate insurance people are just down the hall from me, and I have a ton of support in Engineering Branch to

start moving forward with UAV's for survey. So it's great someone like you has moved ahead on their own initiative, in my opinion.

Cheers, Jim

From: Retzer, David TRAN:EX
Sent: Tuesday, March 31, 2015 9:49 AM
To: Turner, Jim A TRAN:EX
Subject: RE: As Requested: Drone Info

Special Flight Operations Certificate?

No I have been flying within the exemption requirements, so I have avoided having to apply for one of those.

Why do you ask?

From: Turner, Jim A TRAN:EX
Sent: Tuesday, March 31, 2015 9:13 AM
To: Retzer, David TRAN:EX
Subject: RE: As Requested: Drone Info

Hi Dave,

Did you ever get a SFOC?

Thx, Jim

From: Retzer, David TRAN:EX
Sent: Monday, March 30, 2015 2:32 PM
To: Turner, Jim A TRAN:EX
Subject: As Requested: Drone Info

This is the drone that I purchased:

<http://www.dji.com/product/phantom-2-vision-plus>

Key features:

- Quadcopter drone
- Remote range
 - ~300m for live preview via smartphone
 - ~700m for line of site remote control signal
- ~20 minute battery life
- iPhone app to view live footage, record or take photos, and set GPS waypoints
- GPS stabilization with "return to home" feature
- 1080p/14Megapixel camera mounted to the drone with a 3 axis stabilized gimbal
 - The camera can be tilted up or down via the smart phone app.
- Max flight speed is 15m/s
 - Flying at this speed drains the battery quite quickly and the propellers tilt in the way of the video
- Base cost \$1500. Spare battery \$150 case \$229

I have attached the insurance confirmation we spoke about on the phone.

Let me know if I can provide more info

David Retzer | Programming and Project Development | MoT Southern Interior Region | T: 250-828-4260 | C : S.17
S.1 | david.retzer@gov.bc.ca |

Fattore, Miranda J TRAN:EX

From: Retzer, David TRAN:EX
Sent: Tuesday, March 31, 2015 9:49 AM
To: Turner, Jim A TRAN:EX
Subject: RE: As Requested: Drone Info

I put the Hoffman's Bluff videos in:

P:\!Transfer\4JimT

David Retzer | 250-828-4260

From: Turner, Jim A TRAN:EX
Sent: Tuesday, March 31, 2015 9:13 AM
To: Retzer, David TRAN:EX
Subject: RE: As Requested: Drone Info

Hi Dave,

Did you ever get a SFOC?

Thx, Jim

DUPLICATE

February 25, 2015
Construction and
Maintenance Branch
Insurance & Bonds
Phone: 250-387-7580
Facsimile: 250-356-9724

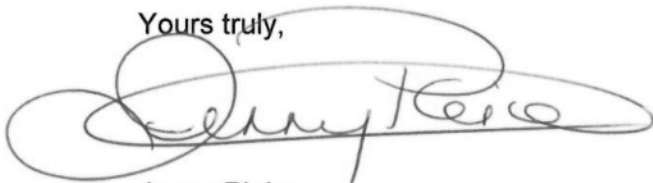
Transport Canada Civil Aviation
30470 Approach Dr.
Abbotsford BC V2T 6H5

**Re: Proof of Insurance
Use of Unmanned Air Vehicles – Compliance with Canadian Aviation Regulations
Timeframe: Ongoing**

This letter will confirm to any peace officer, police officer, by-law enforcement officer, and/or representative of Transport Canada Civil Aviation (TCCA) that the Province of British Columbia is Self-Insured with respect to liabilities for which the province and the Ministry of Transportation and Infrastructure may be held responsible, in conducting flight operations utilizing unmanned air vehicles (UAVs), with a maximum take-off weight not exceeding 2 kilograms. Operation of the UAV is in compliance with the exemptions from the requirements of sections 602.41 and 603.66 of *the Canadian Aviation Regulations* (CARs) pursuant to Subsection 5.9(2) of the *Aeronautics Act*.

This letter is to demonstrate compliance with CARs Exemptions Conditions, General Conditions item #4 and CARs Subsection 606.02(8).

Yours truly,



Jenny Pleice
Corporate Insurance and Bonds Manager
Corporate Procurement and Risk Management
Ministry of Transportation and Infrastructure

Cc: David Retzer
Tom Freeman

**Ministry of Transportation
and Infrastructure**

Corporate Procurement
and Risk Management

Construction and
Maintenance Branch

Mailing Address:
PO Box 9850 Stn Prov Govt
Victoria BC V8W 9T5
Telephone: 250 387-7580
Fax: 250 356-9724

Location:
4C – 940 Blanshard St.
Victoria, BC V8W 9T5
www.gov.bc.ca/tran



From: [Retzer, David](#) TRAN:EX
To: [Knight, Jeff J](#) TRAN:EX
Subject: Drone Info
Date: Monday, March 23, 2015 2:17:00 PM

The drone will be used for taking wide angle before\during\post construction photo and video. It will also be used for investigating archaeological and environmental sites from an aerial perspective. A much larger field of view is achievable and it will be used to reach locations not accessible by foot.

David Retzer | Programming and Project Development | MoT Southern Interior Region | T: 250-828-4260 | C: s.17 | david.retzer@gov.bc.ca |

From: [Turner, Jim A TRAN:EX](#)
To: [Retzer, David TRAN:EX](#)
Subject: RE: As Requested: Drone Info
Date: Tuesday, March 31, 2015 11:29:51 AM

Great thx

Have a look at this video, note the Positional Accuracy, as well as potential for plug & play devices, particularly the 3D laser scanner. <https://www.youtube.com/watch?v=uZq3R7kf2xQ>
Also, an outfit called Velodyne is now making a LiDAR puck that will work on a drone.
Give me a call after you have looked at this video, and I'll show you how it relates to real world survey, within our engineering software requirements.

From: Retzer, David TRAN:EX
Sent: Tuesday, March 31, 2015 11:21 AM
To: Turner, Jim A TRAN:EX
Subject: RE: As Requested: Drone Info

Yes, there are different rules for using it recreationally vs for work purposes. And also weight also comes into play. I'm assuming your survey drones would be over the 2kg threshold (mine is 1.5kg) I am able to use it for work purposes under the exemption. Which would be fairly restrictive for the average person who is looking to build a commercial enterprise. IE real estate. But I can be choosy with which projects I visit and ensure they are far enough away to meet the requirements.

http://www.tc.gc.ca/eng/civilaviation/standards/general-recavi-uav-2265.htm?WT.mc_id=1zfhi#safety

Here is the flowchart and general SFOC exception requirements that I follow:

http://www.tc.gc.ca/media/documents/ca-standards/Infographic_Permission_to_fly_a_UAV_Web_English.pdf

David Retzer | 250-828-4260

From: Turner, Jim A TRAN:EX
Sent: Tuesday, March 31, 2015 10:15 AM
To: Retzer, David TRAN:EX
Subject: RE: As Requested: Drone Info

I'll be looking at setting guidelines down the road for use with survey applications for UAV's either in house, as you are now doing, or via Survey companies bidding on projects for design data acquisition, or possibly construction contractors, using them in our Highway corridors.
I need to do more research, but I think there are slightly different rules if using a UAV as a commercial enterprise, and that used to include the SFOC within Transport Canada rules.
You have looked at the current exemption requirement's, so that seems to cover your current applications fine, but I'm not sure how that would work when we start mining Photogrammetry data (rather than just video and photographs) from the UAV photos, and using them for things like survey grade data acquisition, since that data gets processed for Engineering design etc and is paid for.

Not a show stopper, just something for me to consider on the survey data front, I also believe that we won't need the SFOC for our field survey crews, but I'll have to double check.

And I've checked out the DJI link, as well as chatted with Jenny Pleice, who signed the Proof of Insurance document, as there will be more questions down the road when we try to implement a UAV for survey.

In essence, I am quite happy you have gone this route, and I will be supporting whatever you

decide to use the UAV for. The corporate insurance people are just down the hall from me, and I have a ton of support in Engineering Branch to start moving forward with UAV's for survey. So it's great someone like you has moved ahead on their own initiative, in my opinion.

Cheers, Jim

From: Retzer, David TRAN:EX
Sent: Tuesday, March 31, 2015 9:49 AM
To: Turner, Jim A TRAN:EX
Subject: RE: As Requested: Drone Info
Special Flight Operations Certificate?

No I have been flying within the exemption requirements, so I have avoided having to apply for one of those.

Why do you ask?

From: Turner, Jim A TRAN:EX
Sent: Tuesday, March 31, 2015 9:13 AM
To: Retzer, David TRAN:EX
Subject: RE: As Requested: Drone Info
Hi Dave,
Did you ever get a SFOC?
Thx, Jim

DUPLICATE

From: [Koehl, Debbie TRAN:EX](#)
To: [Retzer, David TRAN:EX](#)
Subject: UAV link
Date: Wednesday, April 8, 2015 9:41:26 AM

<http://aerialvistaproductions.com/want-to-learn-lessons-on-how-to-fly-a-drone-or-uav/599/>

DEB KOEHL | REGIONAL MANAGEMENT ADMINISTRATOR

MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE | SOUTHERN INTERIOR REGION | (250) 828-4220

Fattore, Miranda J TRAN:EX

From: Ben Van Lare S.22
Sent: Monday, April 20, 2015 11:24 AM
To: Turner, Jim A TRAN:EX
Subject: Re: Personal Email

Hey Jim,

My mistake, Al Turner is another mine contact outside Ministry Energy. Our contact with Ministry Energy is Al Hoffman.

Regards,
Ben

On Mon, Apr 20, 2015 at 9:32 AM, Turner, Jim A TRAN:EX <Jim.A.Turner@gov.bc.ca> wrote:

Hi Ben,

I could not find Al Turner at Energy Mines Ministry on our address book. Is he federal? Do you have a contact email address for him?

I will follow up this offer.

Thanks, Jim

From: Ben Van Lare [mailto:S.22]
Sent: Thursday, April 16, 2015 2:49 PM

To: Turner, Jim A TRAN:EX
Subject: Re: Personal Email

Hi Jim,

I had a phone meeting with an Al Turner with the Ministry of Mines. They are interested in having us come out that way and do a demo sometime in May. Not sure what your schedule is but maybe we can meet with you when we are there and schedule a demo also with you and your team. I can try and schedule with Mines around your availability.

Cheers,

Ben

On Mon, Mar 23, 2015 at 1:42 PM, Turner, Jim A TRAN:EX <Jim.A.Turner@gov.bc.ca> wrote:

Hi Ben,

I've forwarded to him. He'll probably contact you if interested.

Fiscal year ends March 31st for govt, so will look at setting up with your company sometime in late April, early May.

Cheers, Jim

From: Ben Van Lare [mailto:s.22]
Sent: Tuesday, March 17, 2015 3:34 PM
To: Turner, Jim A TRAN:EX
Subject: Re: Personal Email

Hey Jim,

I know your real busy but if you don't mind could you forward my contact information to your friend at SNC Lavalin. I'd love to meet with him and try to get some good internal contacts there to show our services.

Cheers,

Ben

On Wed, Mar 11, 2015 at 3:04 PM, Ben Van Lare s.22 wrote:

Jim,

That sounds great. I spoke with the team here and they are good to come that way. Let me know what your schedule looks like and when it would be best and we'll make it happen.

Talk to you soon.

Ben

On Wed, Mar 11, 2015 at 2:26 PM, Turner, Jim A TRAN:EX <Jim.A.Turner@gov.bc.ca> wrote:

Hi Ben,

How would feel about setting up a demonstration near here in Victoria somewhere for the UAV field data collection, then an office demonstration of processing with your software in a boardroom here at Engineering HQ?

That would help me get a few more engineers etc to sit in. That in turn helps me get support to get the process moving.

Thoughts?

Thx, Jim

James A. Turner

Highway Engineering and Geomatics

Traffic, Electrical, Highway Safety, & Geometric Standards section,

Engineering Branch,

Ministry of Transportation & Infrastructure

Victoria, B.C.

Cel: **S.17**

Work: 250-387-0137

Jim.A.Turner@gov.bc.ca

From: Ben Van Lare [mailto:**S.22**]

Sent: Wednesday, March 11, 2015 2:22 PM

To: Turner, Jim A TRAN:EX

Subject: Personal Email

Jim,

Thanks for the call and the information you shared. I will take a look at getting our email server figured out, feel free to contact me via this email or by phone.

Cheers,

Ben

To: Turner, Jim A TRAN:EX

Subject: RE: UAV data

Hi Jim,

Just following up on the delivery of the Needles showcase. How did the meeting go? Any interest in a live presentation?

Anxious to hear how it went,

Peter LeCouffe

Operations Manager

Harrier Aerial Surveys

250.353.3300

HarrierSurveys.ca

From: Jim.A.Turner@gov.bc.ca

To: Peter@Harriersurveys.ca

Subject: FW: UAV data

Date: Mon, 13 Apr 2015 21:57:14 +0000

Belay that, I got it working in windows media.

Thanks Peter

From: Turner, Jim A TRAN:EX

Sent: Monday, April 13, 2015 2:53 PM

To: 'Peter LeCouffe'

Subject: RE: UAV data

Can't see to get the video off this

From: Peter LeCouffe [<mailto:S.22>]

Sent: Monday, April 13, 2015 2:30 PM

To: Turner, Jim A TRAN:EX

Cc: Rob Simmerling

Subject: RE: UAV data

Hello Jim,

I have put together a folder with material you can use from the Highway 6 Needles slide. You can find it here:

<https://www.dropbox.com/sh/ysm0qbol1mk3y6t/AABZgkTDgqNDCU8bnkcjfu1La?dl=0>

Let me know if you need anything else. I am anxious to hear how your presentation goes!

Thanks,

Peter LeCouffe

Operations Manager

Harrier Aerial Surveys

250.353.3300

HarrierSurveys.ca

From: Jim.A.Turner@gov.bc.ca

To: Peter@Harriersurveys.ca

CC: Luke.Dickieson@gov.bc.ca; Geoff.Methuen@gov.bc.ca; Rod.Ralston@gov.bc.ca; Bob.Gourley@gov.bc.ca;

Ed.Miska@gov.bc.ca; Jemay.Zheng@gov.bc.ca

Subject: UAV data

Date: Tue, 7 Apr 2015 19:05:37 +0000

Hi Peter,

Good chatting with you this morning.

As mentioned, I am aware you have supplied Luke/Geoff with some UAV Aerial Photogrammetry processed data at the Needles Slide area on Highway 6 recently.

Conservations also with Geoff have indicated that the data you supplied fit in nicely with our Terrestrial LiDAR processed data, with some very good topographical accuracies.

As discussed, I am doing a presentation to Engineering Branch HQ on UAV drones, and multiple use for different Engineering disciplines including;

- Design Survey (as per the data you picked up at Needles Slide)
- Construction Survey
- Geotechnical Investigation
- Structural Investigation
- Traffic Engineering
- Transport Canada Rules & Regulations for use. (Including SFOC permits, insurance issues etc. I was happy to hear you have covered both that and current liability insurance issues.)

And other related disciplines as pertains to Highway Corridor applications for MoTI.

This email is to request some of the data you captured, should your company decide to provide it to me, to include in that and any future presentations I may do on UAV, as it pertains to use in Highway corridor;

- Permission to use some of the photographs on your website in the presentation
 - Some Aerial Photographs of the Needles Slide
 - Aerial Video of the Needles Slide
 - A few Screen Shots from your Photogrammetry processing Software that include the data, as well as GSD accuracies (and translation to Topographical cm accuracies if possible) that your equipment achieved.
- Also, as mentioned, any of the above listed items I use in the presentation will mention your company name and current services you provide. I will have you review the data/slides portion you have provided, onscreen via Geoff and/or Luke, once I've incorporated it into that specific portion of the presentation I will be showing. However for privacy issues from other supplied data from different sources, I cannot provide you with a view of the entire presentation, only the portion you have supplied.

I hope that may work for you, and I look forward to meeting you and seeing firsthand some of your operations and processing capabilities.

Also as discussed, here is a link to the Ministry General Survey guide, which will give you an idea of Topographical accuracies criteria for Survey in Highway corridors in B.C.

link: http://www.th.gov.bc.ca/publications/eng_publications/survey/general_survey_guide.pdf

Cheers, Jim

James A. Turner

Highway Engineering and Geomatics

Traffic, Electrical, Highway Safety, & Geometric Standards section,

Engineering Branch,

Ministry of Transportation & Infrastructure

Victoria, B.C.

Cel: S.17

Work: 250-387-0137

Jim.A.Turner@gov.bc.ca

Fattore, Miranda J TRAN:EX

From: Peter LeCouffe · S.22
Sent: Monday, April 20, 2015 11:20 AM
To: Turner, Jim A TRAN:EX
Subject: RE: UAV data

Hi Jim,

Thanks for the feedback. If you need any more information from my end let me know. Otherwise I am keen to hear of any further proceedings. Good luck with the red tape!

Thank you,

Peter LeCouffe
Operations Manager
Harrier Aerial Surveys
250.353.3300
HarrierSurveys.ca

From: Jim.A.Turner@gov.bc.ca
To: S.17
Subject: RE: UAV data
Date: Mon, 20 Apr 2015 17:05:42 +0000

Hi again Peter,
That showcase was well done, particularly speeding up the video to capture all the flight items for both fixed wing and helicopter UAV. Very well received at my end.
Since Rod, Luke, and Geoff have seen it in action live, we are on the right path to get things implemented, I'm hoping to meet with the proper insurance etc people at the Ministry, and hope to get the ability for Rod's group and others to contract services. There are a few hurdles to get through first.
I'll keep you posted, and I thank you for your assistance.

Cheers, Jim

James A. Turner
Highway Engineering and Geomatics
Traffic, Electrical, Highway Safety, & Geometric Standards section,
Engineering Branch,
Ministry of Transportation & Infrastructure
Victoria, B.C.
Cel: S.17
Work: 250-387-0137
Jim.A.Turner@gov.bc.ca

From: Peter LeCouffe [mailto:S.22]
Sent: Friday, April 17, 2015 12:01 PM

From: [Crump, Brittney TRAN:EX](#)
To: [Gergley, Chantelle J TRAN:EX](#)
Subject: FW: Drone Info
Date: Thursday, March 19, 2015 3:58:00 PM

From: Retzer, David TRAN:EX
Sent: Thursday, March 19, 2015 3:55 PM
To: Crump, Brittney TRAN:EX
Subject: RE: Drone Info

It was just a brief project justification to our finance department to show value for money:

I do a lot of project photography and video and this will be used to increase the types and quality of shots I can get. A lot of our projects are large in scale, be it an intersection\interchange or a 3km+ section of road. This makes it possible to show a lot more in a photograph or video that I can by standing on the ground with a camera. For many of our larger projects at the planning stages or at the end we will get aerial shots by chartering a helicopter to show the location, geography or completed works. The drone can work well on its own for some of these shots, providing good value for money by reducing these types of expenses. It can also be used quickly in the field to view things such as slides, rock fall, or other natural events. Additionally it can be pre-programmed via GPS to fly in a set path before launching. This opens up a number of possibilities and can also be used to capture shots that may be too far, or require significant effort to reach.

David Retzer | 250-828-4260

From: Crump, Brittney TRAN:EX
Sent: Thursday, March 19, 2015 3:48 PM
To: Retzer, David TRAN:EX
Subject: RE: Drone Info

David,
Do you have a copy of the business case you can share?
Brittney

From: Retzer, David TRAN:EX
Sent: Thursday, March 19, 2015 2:23 PM
To: Crump, Brittney TRAN:EX
Subject: Drone Info

The drone model is: DJI Phantom 2 Vision+ V3.0. It's the latest iteration of the Phantom 2 model. From the research I did it's the best drone to buy at this price range (<\$2000). It takes 1080p video as well as 14 megapixel stills. The camera can be controlled via a live preview on your smartphone.

The things that I purchased are:

DJI Phantom Drone - \$1499 Amazon.ca – now on for \$1419

http://www.amazon.ca/dp/B00P309MZ6/ref=pe_386430_126088100_TE_item

Spare Battery for DJI Phantom - \$151 Amazon.ca

http://www.amazon.ca/DJI-Battery-Phantom-Vision-White/dp/B00I3J4NG2/ref=pd_bxgy_p_img_v

Propeller Guards: \$13.47 Amazon.ca

http://www.amazon.ca/docooler-Propeller-Protective-Protector-Quadcopter/dp/B00J5AF8BW/ref=pd_bxgy_p_img_z

GoProfessional Phantom 2 Case: \$229.99 Henrys.com – hasn't arrived so I can't give you a review yet

<http://www.henrys.com/84563-GOPROFESSIONAL-PHANTOM-2-VISION-CASE.aspx>

LaTrax Alias Practice Drone - \$159 Futureshop

<http://www.futureshop.ca/en-CA/product/latrax-latrax-alias-quadcopter-red-alias-6608/10274418.aspx?path=c9d6bea1af308ac9e66d2e8069dddddceen02>

Spare Battery for LaTrax: \$14.99 Futureshop

<http://www.futureshop.ca/en-CA/product/latrax-latrax-650mah-lipo-battery-6637/10277533.aspx?path=8428ab9f5e117ccc37f5d44516c5bd78en02>

The LaTrax may seem unnecessary but you are piloting a small aircraft and it's best to learn on something less expensive, like the above. Especially for landings.

Transport Canada drone regulations:

http://www.tc.gc.ca/eng/civilaviation/standards/general-recavi-uav-2265.htm?WT.mc_id=1zfhj#safety

The DJI falls under the 2kg threshold. Which means we don't need a permit to fly as long as the exemption regulations are met. This means 9km away from an airport, no higher than 90m, and away from crowds of people, etc. We also have to carry insurance with it, which I provided in the attached PDF. I have printed off the Exemption Requirements infographic from the link above, and I just keep it on hand.

David Retzer | Programming and Project Development | MoT Southern Interior Region | T: 250-828-4260 | C : S.17 | david.retzer@gov.bc.ca |

From: [Gergley, Chantelle J](#) TRAN:EX
To: [Crump, Brittney](#) TRAN:EX
Subject: FW: Drone Info
Date: Thursday, April 23, 2015 2:29:19 PM

From: Mounteney, Renee A TRAN:EX
Sent: Thursday, March 19, 2015 4:39 PM
To: Gergley, Chantelle J TRAN:EX; Livolsi, Patrick C TRAN:EX
Cc: Crump, Brittney TRAN:EX
Subject: RE: Drone Info

I looked up tangible capital assets and it does not look this meets that criteria. We can discuss tomorrow.

Renée

From: Gergley, Chantelle J TRAN:EX
Sent: Thursday, March 19, 2015 4:07 PM
To: Mounteney, Renee A TRAN:EX; Livolsi, Patrick C TRAN:EX
Cc: Crump, Brittney TRAN:EX
Subject: FW: Drone Info

Hi all,

I would like to make the following purchase for the same reasons that the SIR has successfully purchased a drone.

In addition to project photography versus helicopter costs and the advantage during natural disaster events like rock fall, landslides and avalanches I also see an advantage for bridge inspection when occasion calls for it.

It appears that a full business case wasn't pursued, rather a justification through finance. Brittney has gathered the below info from Dave Retzer in SIR who recently purchased one.

I am looking for your support, let me know - thanks

From: Crump, Brittney TRAN:EX
Sent: Thursday, March 19, 2015 3:59 PM
To: Gergley, Chantelle J TRAN:EX
Subject: FW: Drone Info

From: Retzer, David TRAN:EX
Sent: Thursday, March 19, 2015 3:55 PM
To: Crump, Brittney TRAN:EX
Subject: RE: Drone Info

It was just a brief project justification to our finance department to show value for money:

I do a lot of project photography and video and this will be used to increase the types and quality of shots I can get. A lot of our projects are large in scale, be it an intersection\interchange or a 3km+ section of road. This makes it possible to show a lot more in a photograph or video that I can by standing on the ground with a camera. For many of our larger projects at the planning stages or at the end we will get aerial shots by chartering a helicopter to show the location, geography or completed works. The drone can work well on its own for some of these shots, providing good value for money by reducing these types of expenses. It can also be used quickly in the field to view things such as slides, rock fall, or other natural events. Additionally it can be pre-programmed via GPS to fly in a set path before launching. This opens up a number of possibilities and can also be used to capture shots that may be too far, or require significant effort to reach.

David Retzer | 250-828-4260

From: Crump, Brittney TRAN:EX
Sent: Thursday, March 19, 2015 3:48 PM
To: Retzer, David TRAN:EX

Subject: RE: Drone Info

David,

Do you have a copy of the business case you can share?

Brittney

DUPLICATE

From: [Crump, Brittney TRAN:EX](#)
To: [Gergley, Chantelle J TRAN:EX](#)
Subject: RE: Drone Info
Date: Monday, March 30, 2015 3:54:00 PM

I don't think so☹

From: Gergley, Chantelle J TRAN:EX
Sent: Monday, March 30, 2015 3:54 PM
To: Crump, Brittney TRAN:EX
Subject: FW: Drone Info
Lina is going to talk to Rockwork right now – does Naomi have a credit card yet?

From: Crump, Brittney TRAN:EX
Sent: Thursday, March 19, 2015 3:59 PM
To: Gergley, Chantelle J TRAN:EX
Subject: FW: Drone Info

From: Retzer, David TRAN:EX
Sent: Thursday, March 19, 2015 3:55 PM
To: Crump, Brittney TRAN:EX
Subject: RE: Drone Info

It was just a brief project justification to our finance department to show value for money:
I do a lot of project photography and video and this will be used to increase the types and quality of shots I can get. A lot of our projects are large in scale, be it an intersection\interchange or a 3km+ section of road. This makes it possible to show a lot more in a photograph or video that I can by standing on the ground with a camera. For many of our larger projects at the planning stages or at the end we will get aerial shots by chartering a helicopter to show the location, geography or completed works. The drone can work well on its own for some of these shots, providing good value for money by reducing these types of expenses. It can also be used quickly in the field to view things such as slides, rock fall, or other natural events. Additionally it can be pre-programmed via GPS to fly in a set path before launching. This opens up a number of possibilities and can also be used to capture shots that may be too far, or require significant effort to reach.

David Retzer | 250-828-4260

From: Crump, Brittney TRAN:EX
Sent: Thursday, March 19, 2015 3:48 PM
To: Retzer, David TRAN:EX
Subject: RE: Drone Info

David,

Do you have a copy of the business case you can share?

Brittney

DUPLICATE

DUPLICATE

Derkson, Debra TRAN:EX

From: Schimpf, Graeme TRAN:EX
Sent: Friday, March 27, 2015 10:15 AM
To: Tan, Deborah TRAN:EX
Cc: Radzimowski, Zbigniew TRAN:EX
Subject: FW: Remote inspection of Creek Channels

Deborah – this seems like a very good way to complete the liner inspections of the channels with concrete liners on the STS. Our concern is that the liners are aging and need to be reviewed annually. This was not included in the STS arrangement, but is critical to ensure the structures along Hwy 99 function as intended.

As a comparison, an engineering firm provided an estimate of \$60,000.00 to complete drone inspections.

I'd like to implement this as an annual process and just need to sort out a funding mechanism.

Would you be able to discuss this with BCFTA to see if we can include this as an RPC, funded by the project until the end of the CA.

Thank you.

Graeme Schimpf
Operations Manager
Lower Mainland District - North Shore, Howe Sound, Sunshine Coast

From: Tom Cloutier [<mailto:Tom.Cloutier@millercapilano.ca>]
Sent: Wednesday, March 25, 2015 5:46 PM
To: Radzimowski, Zbigniew TRAN:EX
Cc: Larry Paradis; Schimpf, Graeme TRAN:EX; XT:MtCon, Steve Drummond (MPS-CHS) TRAN:EX
Subject: Remote inspection of Creek Channels

Hi Zbigniew,

We have estimated a price to provide UAV inspections of four concrete lined creek channels on the Sea to Sky Highway as discussed.

The cost for this would be approximately \$4,500.00 per year lump sum depending on scope. This estimate would provide still photography covering the whole channel from ocean to top.

We would need to define the requirements further to firm up this pricing but for now this should be close.

Let me know if you have any questions.

Regards,
Tom

Tom Cloutier
Miller Capilano Maintenance Corporation
38921 Mid Way Squamish
V8B 0J5
PH: 604-892-1010 ext. 24

Derkson, Debra TRAN:EX

From: Schimpf, Graeme TRAN:EX
Sent: Tuesday, February 3, 2015 1:43 PM
To: Tan, Deborah TRAN:EX
Subject: FW: UAV Survey, Alberta, Magnesia, Newman, Charles, Concrete Lined Channels, Hwy 99
Attachments: PR 2015-01-27 Contract #156CS0782 - UAV Surrey Draft.pdf; PPSU 999-00035086-PP Newman 15 Jan 27.pdf; PPSU 999-00035086-PP Charles 15 Jan 27.pdf; PPSU 999-00035086-PP Harvey 15 Jan 27.pdf; PPSU 999-00035086-PP Alberta 15 Jan 27.pdf; PPSU 999-00035086-PP Magnesia 15 Jan 27.pdf; 1468Ch I10 Channel upper section left side - deep wear with a hole.JPG; 1468Ch I16a Channel mid-section - big hole (another view).JPG

Deborah – this makes a total cost pressure of 66,500.00. I am wondering if it would be reasonable to target one location per year which would mean we should be forecasting approximately \$15,000 per year to review liners of the creeks on the STS.

The priority currently would be Newman Creek, based on the conditions noted.

Is this something we can request BCTFA to fund? I believe it was oversight that these inspections were never included in the STS project.

Graeme Schimpf
Operations Manager – North Shore, Howe Sound & Sunshine Coast

Ministry of Transportation and Infrastructure
Lower Mainland District
Suite 310 - 1500 Woolridge Street
Coquitlam, BC V3K 0B8
604-527-2236

From: Kong, Sze Pui TRAN:EX
Sent: Tuesday, February 3, 2015 9:28 AM
To: Schimpf, Graeme TRAN:EX
Cc: Radzimowski, Zbigniew TRAN:EX; Tan, Deborah TRAN:EX
Subject: RE: UAV Survey, Alberta, Magnesia, Newman, Charles, Concrete Lined Channels, Hwy 99

Graeme,

Please see attached draft cost estimate and work plan for the UAV survey. Below is a summary of cost for each creek channel. The cost includes: 1) Review of existing data, 2) Preflight Activities and Fieldwork, 3) UAV survey and Photogrammetry Field work, 4) Data Processing, and 5) Condition Assessment and Recommendation/Suggesting for further detail assessment and repair strategies.

I reviewed the photos taken by Zbigniew on January 21 and it shows the Newman Creek has a couple of puncture in the concrete liner exposing the underlying riprap and gravel. This would cause undermining of the concrete liner. I believe that we should assess this creek channel as soon as possible so repair can be done soon. Based on the proposed schedule given by the Ministry, exp could start working on Newman Creek once authorization/funding is received. The other creek channels will be can be completed during low flow (July – August) with authorization.

Creek Channel	Cost
Newman	\$15,250
Harvey	\$17,800
Alberta	\$15,250
Magnesia	\$9,100
Charles	\$9,100

Note: the cost for Magnesia and Charles is relatively lower because at Magnesia, it is at the bridge crossing only and Charles Creek required no field assessment (only survey) as the liner is new and consider good in condition.

Please review and comment. If the cost estimate is good, please provide an authorization to proceed.

If there's any question, please contact me.

Regards,

Sze Pui Kong, P.Eng.

Geotechnical Engineer

Phone: 604-527-2279

Cell: S. 17

From: Schimpf, Graeme TRAN:EX
Sent: Tuesday, January 13, 2015 1:14 PM
To: Gerraghty, David E TRAN:EX; Tan, Deborah TRAN:EX
Cc: Kong, Sze Pui TRAN:EX; Radzimowski, Zbigniew TRAN:EX
Subject: RE: UAV Survey, Alberta, Magnesia, Newman, Charles, Concrete Lined Channels, Hwy 99

I am guessing that aspects of the channel are outside the right of way and therefore not strictly reviewed by the concessionaire as part of the CA, that being the case I would suggest that we include this in the inspection (can't see why we would leave one out).

Graeme Schimpf
Operations Manager – North Shore, Howe Sound & Sunshine Coast

Ministry of Transportation and Infrastructure
Lower Mainland District
Suite 310 - 1500 Woolridge Street
Coquitlam, BC V3K 0B8
604-527-2236

From: Gerraghty, David E TRAN:EX
Sent: Tuesday, January 13, 2015 1:12 PM
To: Schimpf, Graeme TRAN:EX; Tan, Deborah TRAN:EX
Cc: Kong, Sze Pui TRAN:EX; Radzimowski, Zbigniew TRAN:EX
Subject: RE: UAV Survey, Alberta, Magnesia, Newman, Charles, Concrete Lined Channels, Hwy 99

Graeme, Deborah,

With the benefit of Zbigniew's info, please advise if you would like us to include the concreted part of Magnesia Creek Channel in the scope of the expanded creek inspection program.

Thanks

David Gerraghty, P.Eng.
Manager, Geotech. & Materials Engineering
South Coast Region
Ph: 604 527-2284
e-mail: david.gerraghty@gov.bc.ca

From: Radzimowski, Zbigniew TRAN:EX
Sent: Monday, January 12, 2015 2:51 PM
To: Gerraghty, David E TRAN:EX; Schimpf, Graeme TRAN:EX
Cc: Kong, Sze Pui TRAN:EX; Tan, Deborah TRAN:EX
Subject: RE: UAV Survey, Alberta, Magnesia, Newman, Charles, Concrete Lined Channels, Hwy 99

01452 Magnesia Creek Channel has a concrete liner under the bridge that extends both directions for about 30-40m from the bridge drip line. If this is within a highway right of way, Concessionaire is responsible for the inspection and maintenance of this part of the channel. But if it is not, it should be included in the scope of the expanded concrete channel inspection program.

Regards,

Zbigniew Radzimowski
Area Manager - Bridges

Lower Mainland District
Ministry of Transportation
tel: 604-816-2169
fax: 604- 527-2222

From: Gerraghty, David E TRAN:EX
Sent: Thursday, January 8, 2015 9:25 AM
To: Radzimowski, Zbigniew TRAN:EX; Schimpf, Graeme TRAN:EX
Cc: Kong, Sze Pui TRAN:EX; Tan, Deborah TRAN:EX
Subject: RE: UAV Survey, Alberta, Magnesia, Newman, Charles, Concrete Lined Channels, Hwy 99

Everyone,

I agree with Zbigniew's suggestion to use official Creek Names and Bridge Numbers – thanks.

Sorry, in my e-mail below I've confused Magnesia and Harvey. All reference to Magnesia in my e-mail below should be read as Harvey. This means I've omitted Magnesia and I did so because Miller-Cap advised there is no concrete liner on this creek channel. If this advice is incorrect then we should include Magnesia. Graeme/Zbigniew, can you confirm the presence on a concrete liner on Magnesia.

David Gerraghty, P.Eng.
Manager, Geotech. & Materials Engineering
South Coast Region
Ph: 604 527-2284
e-mail: david.gerraghty@gov.bc.ca

From: Radzimowski, Zbigniew TRAN:EX
Sent: Thursday, January 8, 2015 9:01 AM
To: Gerraghty, David E TRAN:EX; Schimpf, Graeme TRAN:EX
Cc: Kong, Sze Pui TRAN:EX; Tan, Deborah TRAN:EX
Subject: RE: UAV Survey, Alberta, Magnesia, Newman, Charles, Concrete Lined Channels, Hwy 99

Graeme,

In our initial conversations we identified 5 channels for inspection:

01452 Magnesia Creek Channel
01457 Charles Creek Channel
01462 Harvey Creek Channel
01463 Alberta Creek Channel
01468 Newman Creek Channel

The e-mail below identifies only four.

I suggest that in future correspondence and reporting we use official numbers and names of the structures crossing the creeks (with an additional identifier "Channel"), as above, for a consistency of filing.

Regards,

Zbigniew Radzimowski
Area Manager - Bridges

Lower Mainland District
Ministry of Transportation
tel: 604-816-2169
fax: 604- 527-2222

From: Gerraghty, David E TRAN:EX
Sent: Thursday, January 8, 2015 8:28 AM
To: Schimpf, Graeme TRAN:EX
Cc: Kong, Sze Pui TRAN:EX; Radzimowski, Zbigniew TRAN:EX; Tan, Deborah TRAN:EX
Subject: RE: UAV Survey, Alberta, Magnesia, Newman, Charles, Concrete Lined Channels, Hwy 99

Graeme,

Yes, we're only asking for a work plan and estimate.

Sze, Please remind exp that authorization to proceed is subject to availability of funding (even though we have the same language in the contract).

Thanks

David Gerraghty, P.Eng.
Manager, Geotech. & Materials Engineering
South Coast Region
Ph: 604 527-2284
e-mail: david.gerraghty@gov.bc.ca

From: Schimpf, Graeme TRAN:EX
Sent: Wednesday, January 7, 2015 4:44 PM
To: Gerraghty, David E TRAN:EX
Cc: Kong, Sze Pui TRAN:EX; Radzimowski, Zbigniew TRAN:EX; Tan, Deborah TRAN:EX
Subject: Re: UAV Survey, Alberta, Magnesia, Newman, Charles, Concrete Lined Channels, Hwy 99

David - thank you for this.

Believe it does include the intent.

Just want to confirm - we are only looking for an estimate at this time.

Graeme Schimpf
Operations Manager
Lower Mainland District - North Shore, Howe Sound, Sunshine Coast

Sent from my iPhone

On Jan 7, 2015, at 3:21 PM, "Gerraghty, David E TRAN:EX" <David.Gerraghty@gov.bc.ca> wrote:

Sze,

The District verbally asked if we could arrange an Unmanned Aerial Vehicle (UAV) inspection of the concrete lined creek channels on the Sea to Sky Hwy in the vicinity of Lions Bay. I said we could since we have exp under contract and I know exp have the ability to provide this service. I'd appreciate it if you could manage this assignment and request a work plan/cost estimate from exp with submission by say mid February. Funding would be provided by the District.

The work plan should cost each creek separately and show personnel, hourly rates, and task hours for each person, summed and totaled with disbursements.

Four creek channels are identified for this assignment, Alberta, Magnesia, Newman, and Charles. Alberta and Magnesia are in Lions Bay. Newman and Charles are about 3km and 4.4km south of Lions Bay. The channels forming Alberta and Newman are lined concrete cutes. The channels forming Magnesia and Charles are lined with concreted boulders. Details below:

Alberta Ck: the liner extends from the ocean upslope about 0.7km. Hwy 99 crosses the creek about 0.2km from the ocean. This is a shaped channel with a true casting in place concrete lining.

Magnesia Ck: the liner extends from the ocean upslope to the debris control facility, a distance of 0.7km. Hwy 99 crosses the creek about 0.4km from the ocean. The channel retains its natural shape but is lined with concreted boulders.

Newman Ck: the liner extends from the ocean upslope to the waterfall, a distance of 0.3km. Hwy 99 crosses the creek about 0.16km from the ocean. This is a shaped channel with a true casting-in place concrete liner.

Charles Ck: the liner extends from the ocean to the lower private bridge, a distance of 0.07km. Hwy 99 crosses the creek about 0.17km from the ocean.

Please note: Charles Creek is included for a cost estimate only. No field assessment is required because the liner is new, constructed in 2010, and the liner is assessed to be in good condition.

As background, the Concessionaire is not responsible for condition assessments of the concrete lined channels and the Ministry doesn't have a formal system in place to do this. The Ministry decided to undertake formal assessments after a scour hole was discovered on Newman creek resulting in unauthorized repairs by local residents who then requested reimbursement of repair costs from the Ministry. A UAV survey is a good approach since some of the creek channels are too steep for conventional foot reconnaissance.

It's anticipated the assessment would be performed principally using an Unmanned Aerial Vehicle (UAV) and where feasible by foot reconnaissance. Foot reconnaissance is possible along Magnesia and Charles. Alberta is too steep and too difficult to access for foot reconnaissance. I've been advised foot reconnaissance is possible along Newman in dry weather when creek flows are minimal however I'll let exp make their own determination.

The purpose is to establish a local referencing system along each channel and identify damage or deterioration to the concrete that may affect the functionality of the liners, e.g. puncture holes, scour holes, cracking etc. It's anticipated the UAV work would involve a higher level flight to establish local stationing and a lower level flight for the actual assessments. The assessments would be channel edge to channel edge excluding retaining walls beyond the channel edge.

I understand there are a couple of puncture holes caused by boulders bouncing down the channel at Newman therefore Newman should be assessed as soon as can be reasonably scheduled after authorization to proceed is provided by the Ministry. For the other channels the assessment should be performed at the time of lowest flow in August.

Deliverables would be a short report outlined findings, a continuous photo contoured plan of each channel with local stationing and specific images as appropriate along the channel. A draft report is due one month after completion of the assessments and a final report one week after receiving Ministry comments.

Sze, If I've missed anything please add. if you need more info please contact Graeme.

Graeme, Does this capture the purpose of the assignment. Please respond to Sze.

Thanks

David Gerraghty, P.Eng.
Manager, Geotech. & Materials Engineering
South Coast Region
Ph: 604 527-2284
e-mail: david.gerraghty@gov.bc.ca



Memorandum

Date: January 27, 2015

Reference No.:

999-00035086-PP

To:	cc:	Company	Contact	Email
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ministry of Transportation and Infrastructure	Sze Pui Kong, P.Eng.	szepui.kong@gov.bc.ca
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ministry of Transportation and Infrastructure	David Gerraghty, P.Eng.	david.gerraghty@gov.bc.ca
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ministry of Transportation and Infrastructure	Salem Bahamdun, P.Eng.	salem.bahamdun@gov.bc.ca

From: Don Sargent, P.Eng.

Total No. of Pages: 4 + Attachments

Subject: **Contract # 156CS0782 – UAV Survey and Condition Assessment
Hwy 99 (Sea to Sky) – Five Creek Channels near Lions Bay, BC
Engineering Services Proposal *Draft***

COMMENTS:

The Ministry is seeking services for condition inspections on five, concrete lined creek channels situated in or near Lions Bay, along the Hwy 99, Sea to Sky Highway.

The inspections would be done using an Unmanned Aerial Vehicle (UAV) and where practical and feasible, to supplement the aerial inspection by conventional foot reconnaissance and concrete condition assessment/photos to obtain photographic data to produce the following deliverables for each site:

- Local reference, contour plan developed from continuous photo survey using photogrammetry;
- Site specific close-up images – referenced to the item a survey, showing concrete condition;
- Brief memorandum outlining the method and results of the UAV survey and concrete lining condition assessments.

As background, the Concessionaire is not responsible for condition assessments of the concrete lined channels and the Ministry doesn't have a formal system in place to do this. The Ministry decided to undertake formal assessments after a scour hole was discovered on Newman creek which was repaired. A UAV survey is considered a good approach since some of the creek channels are too steep for conventional foot reconnaissance.

In accordance with your request in the email dated January 16, 2015, **exp** Services Inc. (**exp**) is pleased to present our proposal to provide the engineering services for the above noted program. The engineering services would be provided under the As and When Contract 156CS0782 between the Ministry and **exp**.

The assignment is to complete the UAV survey and condition assessments on four of the five creek channels, and to submit the deliverables outlined above.

SITE DESCRIPTIONS, LOCATION REFERENCE

The following Table 1 outlines some characteristics of the sites, and location along Hwy 99 relative to the highway exit at Horseshoe Bay.

Table 1 UAV Survey Summary of Channel Location Features						
Creek Channel	Hwy 99 Reference km	Separation km	Length from Ocean km	Distance to Hwy Crossing	Type	Partial Foot Reconnaissance
Charles ⁽²⁾	7.3		0.07	0.17	Concrete Boulder	√
		1.2				
Newman	8.5		0.3	0.16	True Cast Lining	√ TBA
		2				
Lions Bay South Boundary	10.5		-			-
		1				
Harvey	11.5		0.7	0.4	Concrete Boulder	√
		0.3				
Alberta	11.8		0.7	0.2	True Cast Lining	Too Steep
		1.2				
Lions Bay North Boundary	13		-			-
		0.5				
Magnesia	13.5		0.08 ⁽¹⁾		At Bridge	√

Notes: (1) Liner at Hwy 99 Bridge crossing only.

(2) Charles Creek Channel is included for cost estimate only. No field assessment is required because the liner is new (construction in 2010) and considered in good condition.

The following provides additional information for each of the creek channels:

- 01457 Charles Creek Channel: the liner extends from the ocean to the lower private bridge, a distance of 0.07km. Hwy 99 crosses the creek about 0.17km from the ocean.
- 01468 Newman Creek Channel: the liner extends from the ocean upslope to the waterfall, a distance of 0.3km. Hwy 99 crosses the creek about 0.16km from the ocean. This is a shaped channel with a true casting-in place concrete liner.
- 01462 Harvey Creek Channel: the liner extends from the ocean upslope to the debris control facility, a distance of 0.7km. Hwy 99 crosses the creek about 0.4km from the ocean. The channel retains its natural shape but is lined with concreted boulders.
- 01463 Alberta Creek Channel: the liner extends from the ocean upslope about 0.7km. Hwy 99 crosses the creek about 0.2km from the ocean. This is a shaped channel with a true casting in place concrete lining.
- 01452 Magnesia Creek Channel: the liner extends under the bridge in both direction for 30-40m from the bridge drip line.

In general, the terrain is steeply sloping and good portions of the areas are inaccessible to foot reconnaissance. Part of the assignment will be to access suitable UAV launch pads and observation platforms for survey purposes.

The site constraints include Hwy 99 traffic, nearby residential/business buildings, pedestrian walkways, brush and power lines (potential interference to aerial vehicle radio transmission).

WORK PLAN PROPOSAL

The following outlines the **exp** work plan developed based on information provided, and the anticipated schedule.

- 1) Project Execution, Quality Management, Initiations
 - Review historical records, e.g. drawings, construction dates and methods.
- 2) Pre-Flight Activities, Notifications and Fieldwork
 - Notification, written notice to residents and businesses that are located adjacent to the creek channel, near flight paths, flight notification SFOC.
 - Clearances, check power line signals and potential interference to UAV drone.
 - Initial foot reconnaissance to include accessible creek channel areas, drone launch pads, observation platforms.
 - Undertake control surveys, field measurements for local reference scales on contour plans, install field markings as necessary.
 - Equipment pre-flight checks.
 - Flight plans reviewed.
- 3) UAV Survey, Photogrammetry Fieldwork
 - Equipment mob/demob to launch pads, and observation platforms.
 - Fly aerial vehicle survey, typical 10 minutes per flight path; anticipate 3 to 6 flight paths flown per day (replace battery pack for each flight).
 - Flight paths to include higher level photography and close-up images including areas identified under foot reconnaissance.
- 4) Data Processing and Analysis, Office
 - Digital downloading.
 - Photogrammetry processing and high level photo mosaic.
 - Photo logging, referencing site specific imagery.
 - DTM, local reference contour topography of creek channel, side slopes.
 - Condition Assessments.
- 5) Condition Assessment Memorandum, for each channel
 - Outline methods, reference system.
 - Photographic and contour plan outputs.
 - Identified liner damage and defects/deteriorations that could affect function, e.g. puncture holes, scour holes, cracks, etc.
 - Recommendations and suggestions for further assessment, repair strategies.

PERSONNEL

The project review engineer will be Don Sargent, P.Eng. and the project engineer will be Evan Sykes, P.Eng., who will assist with overall aspects of the surveys. The UAV survey would be undertaken by Paul Lepine, Senior Geotechnical Technician. The Materials Engineer, Alvin Leong, M.Sc., P.Eng., will carry out the foot reconnaissance, and he has over 14 years' experience on concrete construction and condition assessments. The project staff will be assisted by exp technical staff.

SCHEDULE

It is anticipated that fieldwork for Newman Creek would be done in February 2015 and outputs would be available in February/March 2015. The remaining creeks would be done at a time of lowest flow, in August 2015

FEE

We would carry out services on a fee and expense basis and as per the "As and When Services Agreement's" terms and conditions. The fee estimates shown on the attached Schedule A pages are applicable for each of the five creek channels.

On the initial site, we will utilize GPS survey and local scale survey methods. The GPS survey will be done as an independent method to check the accuracy and reliability of the local scale method. Provided the local scale method compares favorably with the GPS survey, the local scale survey method is to be used on subsequent sites. The pricing on Schedule A reflects a one time use of the GPS survey at Newman Creek.

We trust the foregoing meets with your approval. Acceptance of proposal may be confirmed by written authorization.

If you have any questions, please contact me.

Submitted by:

Reviewed by:

exp Services Inc.

Draft

Don Sargent, P.Eng.
Senior Engineer

Evan Sykes, P.Eng.
Senior Engineer

Attachments: Schedule A – Newman Creek
Schedule A – Charles Creek
Schedule A – Harvey Creek
Schedule A – Alberta Creek
Schedule A – Magnesia Creek



SCHEDULE A - Harvey Creek

Date:	2015-Jan-27	Project Mgr:	Don Sargent, P. Eng.	Proposal No.	999-00035086-PP
Billing Client Name:	Ministry of Transportation and Infrastructure				
Attention:	Sze Pui Kong, P. Eng.				
Billing Client Address:	310 - 1500 Woolridge Street				
	Coquitlam, BC				
	V3K 0B8				
Project Name:	Contract # 156CS0782 - UAV Survey				
Project Address:	Newman Creek, Charles Creek, Harvey Creek, Alberta Creek, Magnesia Creek				
SCOPE OF WORK AND FEES					
ACTIVITIES		Unit Breakdown		Est. Fees (\$)	
1	Project Execution, Quality Plan - Record Reviews, Safety	Hourly, Allow		s.17	
2	Pre-Flight Activities, Fieldwork - Notifications, Clearances - Foot Reconnaissance, Control Surveys - Flight Plan Reviews/assessment	Hourly, Allow		s.17	
3	UAV Survey, Fieldwork - Mob/Demob Equipment - Fly Site, Close-Up Images	Hourly, Allow		s.17	
4	Data Processing, Outputs - Downloading - DTM, Continuous Photo - Close-Up Imagery - Condition Assessment	Hourly, Allow		s.17	
5	Memorandum Report	Hourly, Allow		s.17	
		Fees Subtotal		\$16,115	
	Disbursements				
	- Aerial vehicle	Included			
	- UAV Supplies	Allow		s.17	
	- GPS Survey Equipment Charge	Allow		s.17	
	- Travel & expenses	Allow		s.17	
		Disbursements Subtotal		s.17	
2% Administrative Fee:		N/A			
SUB TOTAL (excluding GST)				\$ 16,925.00	
GST				\$ 846.25	
GRAND TOTAL (including GST)				\$ 17,771.25	



SCHEDULE A - Newman Creek

Date:	2015-Jan-27	Project Mgr:	Don Sargent, P. Eng.	Proposal No.	999-00035086-PP
Billing Client Name:	Ministry of Transportation and Infrastructure				
Attention:	Sze Pui Kong, P. Eng.				
Billing Client Address:	310 - 1500 Woolridge Street				
	Coquitlam, BC				
	V3K 0B8				
Project Name:	Contract # 156CS0782 - UAV Survey				
Project Address:	Newman Creek, Charles Creek, Harvey Creek, Alberta Creek, Magnesia Creek				
SCOPE OF WORK AND FEES					
ACTIVITIES		Unit Breakdown		Est. Fees (\$)	
1	Project Execution, Quality Plan - Record Reviews, Safety	Hourly, Allow		s.17	
2	Pre-Flight Activities, Fieldwork - Notifications, Clearances - Foot Reconnaissance, Control Surveys - Flight Plan Reviews/assessment	Hourly, Allow		s.17	
3	UAV Survey, Fieldwork - Mob/Demob Equipment - Fly Site, Close-Up Images	Hourly, Allow		s.17	
4	Data Processing, Outputs - Downloading - DTM, Continuous Photo - Close-Up Imagery - Condition Assessment	Hourly, Allow		s.17	
5	Memorandum Report	Hourly, Allow		s.17	
		Fees Subtotal		s.17	
	Disbursements				
	- Aerial vehicle	Included			
	- UAV Supplies	Allow		s.17	
	- GPS Survey Equipment Charge	Allow		s.17	
	- Travel & expenses	Allow		s.17	
		Disbursements Subtotal		s.17	
2% Administrative Fee:		N/A			
SUB TOTAL (excluding GST)				\$ 14,510.00	
GST				\$ 725.50	
GRAND TOTAL (including GST)				\$ 15,235.50	



SCHEDULE A - Alberta Creek

Date:	2015-Jan-27	Project Mgr:	Don Sargent, P. Eng.	Proposal No.	999-00035086-PP
Billing Client Name:	Ministry of Transportation and Infrastructure				
Attention:	Sze Pui Kong, P. Eng.				
Billing Client Address:	310 - 1500 Woolridge Street				
	Coquitlam, BC				
	V3K 0B8				
Project Name:	Contract # 156CS0782 - UAV Survey				
Project Address:	Newman Creek, Charles Creek, Harvey Creek, Alberta Creek, Magnesia Creek				
SCOPE OF WORK AND FEES					
ACTIVITIES		Unit Breakdown		Est. Fees (\$)	
1	Project Execution, Quality Plan - Record Reviews, Safety	Hourly, Allow		s.17	
2	Pre-Flight Activities, Fieldwork - Notifications, Clearances - Foot Reconnaissance, Control Surveys - Flight Plan Reviews/assessment	Hourly, Allow		s.17	
3	UAV Survey, Fieldwork - Mob/Demob Equipment - Fly Site, Close-Up Images	Hourly, Allow		s.17	
4	Data Processing, Outputs - Downloading - DTM, Continuous Photo - Close-Up Imagery - Condition Assessment	Hourly, Allow		s.17	
5	Memorandum Report	Hourly, Allow		s.17	
		Fees Subtotal		s.17	
Disbursements					
- Aerial vehicle		Included			s.17
- UAV Supplies		Allow		\$	
- GPS Survey Equipment Charge		Allow		\$	s.17
- Travel & expenses		Allow		\$	s.17
		Disbursements Subtotal		s.17	
2% Administrative Fee:		N/A			
SUB TOTAL (excluding GST)				\$ 14,495.00	
GST				\$ 724.75	
GRAND TOTAL (including GST)				\$ 15,219.75	



SCHEDULE A - Charles Creek

Date:	2015-Jan-27	Project Mgr:	Don Sargent, P. Eng.	Proposal No.	999-00035086-PP
Billing Client Name:	Ministry of Transportation and Infrastructure				
Attention:	Sze Pui Kong, P. Eng.				
Billing Client Address:	310 - 1500 Woolridge Street				
	Coquitlam, BC				
	V3K 0B8				
Project Name:	Contract # 156CS0782 - UAV Survey				
Project Address:	Newman Creek, Charles Creek, Harvey Creek, Alberta Creek, Magnesia Creek				
SCOPE OF WORK AND FEES					
ACTIVITIES		Unit Breakdown		Est. Fees (\$)	
1	Project Execution, Quality Plan - Record Reviews, Safety	Hourly, Allow		s.17	
2	Pre-Flight Activities, Fieldwork - Notifications, Clearances - Foot Reconnaissance, Control Surveys - Flight Plan Reviews/assessment	Hourly, Allow		s.17	
3	UAV Survey, Fieldwork - Mob/Demob Equipment - Fly Site, Close-Up Images	Hourly, Allow		s.17	
4	Data Processing, Outputs - Downloading - DTM, Continuous Photo - Close-Up Imagery - Condition Assessment	Hourly, Allow		s.17	
5	Memorandum Report	Hourly, Allow		s.17	
		Fees Subtotal		s.17	
Disbursements					
- Aerial vehicle		Included			
- UAV Supplies		Allow		s.17	
- GPS Survey Equipment Charge		Allow		\$	
- Travel & expenses		Allow		\$ s.17	
		Disbursements Subtotal		s.17	
2% Administrative Fee:		N/A			
SUB TOTAL (excluding GST)				\$ 8,615.00	
GST				\$ 430.75	
GRAND TOTAL (including GST)				\$ 9,045.75	



SCHEDULE A - Magnesia Creek

Date:	2015-Jan-27	Project Mgr:	Don Sargent, P. Eng.	Proposal No.	999-00035086-PP
Billing Client Name:	Ministry of Transportation and Infrastructure				
Attention:	Sze Pui Kong, P. Eng.				
Billing Client Address:	310 - 1500 Woolridge Street				
	Coquitlam, BC				
	V3K 0B8				
Project Name:	Contract # 156CS0782 - UAV Survey				
Project Address:	Newman Creek, Charles Creek, Harvey Creek, Alberta Creek, Magnesia Creek				
SCOPE OF WORK AND FEES					
ACTIVITIES		Unit Breakdown		Est. Fees (\$)	
1	Project Execution, Quality Plan - Record Reviews, Safety	Hourly, Allow		s.17	
2	Pre-Flight Activities, Fieldwork - Notifications, Clearances - Foot Reconnaissance, Control Surveys - Flight Plan Reviews/assessment	Hourly, Allow		s.17	
3	UAV Survey, Fieldwork - Mob/Demob Equipment - Fly Site, Close-Up Images	Hourly, Allow		s.17	
4	Data Processing, Outputs - Downloading - DTM, Continuous Photo - Close-Up Imagery - Condition Assessment	Hourly, Allow		s.17	
5	Memorandum Report	Hourly, Allow		s.17	
		Fees Subtotal		s.17	
	Disbursements				
	- Aerial vehicle	Included		s.17	
	- UAV Supplies	Allow		\$ s.17	
	- GPS Survey Equipment Charge	Allow		\$ s.17	
	- Travel & expenses	Allow		\$ s.17	
		Disbursements Subtotal		s.17	
2% Administrative Fee:		N/A			
SUB TOTAL (excluding GST)				\$ 8,615.00	
GST				\$ 430.75	
GRAND TOTAL (including GST)				\$ 9,045.75	



01-21-2015



01/21/2015

**Terms of Reference
For
As and When Required
Highway Survey and Design Engineering Services Contract
April 2015**

Northern Region

RFEI: 25790

April 2015

Submission Deadline: 4:00PM April 23, 2015

Contact Person:
Trevor Key
Survey Project Supervisor
Northern Region
250-565-4162
Trevor.Key@gov.bc.ca

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Page 8	Schedule C Deliverables, Schedule and Response Time
Page 9	Schedule D Personnel and Company Experience
Page 10	Proposal Terms, Conditions and Evaluation
Page 10	Proposal Submission
Page 11	Proponent Agreement

APPENDICES

Appendix A	H0461 – CSC Contract
Appendix B	H0461c - Schedule of Reimbursable Travel Expenses
Appendix C	H0461d – Special Conditions
Appendix D	H0461x - Individual Work Order
Appendix E	Insurance Specification INS-80

Assignment Overview

The Northern Region of the Ministry of Transportation and Infrastructure (“the Ministry”) requires a Contractor (“the Consultant”) to provide as and when required highway survey and design engineering services in the Northern Region.

The contractor will help facilitate the successful completion of the Northern Region’s survey and design requirements that are necessary for various functions, disciplines and business units.

The extents of the requests are dependent on individual project scope and budget resources. Assignments may originate from Project Management, Design, Geotechnical, Bridges, Planning, Districts, Property Services, and Field Services (construction and paving). They may include capital, rehabilitation, EMBC, and other Ministry programs.

The types of services requested by the Ministry may be, but are not limited to:

1. Primary control ---- high accuracy, geodetic.
2. Air Photo and LiDAR data acquisition and subsequent aerial mapping products.
3. Horizontal and vertical control for aerial mapping, including the setting of air photo targets in the field.
4. Field surveys, CAiCE models and AutoCAD drawings for all road and route improvement situations as per ministry standards. Civil 3D to replace CAiCE models with Ministry approval.
5. High Precision Monitoring
6. Precision Scanning
7. Experience and qualifications to deliver MoTI standard suite of mapping deliverables using unmanned aerial vehicles (UAV’s)
8. Property owner, crown land, land title and utility research. Subsequent plan acquisition, field ties and cadastral/utility compilations for project.
9. Bridge site plans and Hydrographic surveys to ministry and project specifications.
10. Surveys to support geotechnical functions such as slide area site plans, test hole ties, ground stabilization monitoring and gravel reserves.
11. Right of Way staking or flagging based on LTO plans or design drawings.
12. Road construction staking, layout and volume re-measures.
13. Center line and roadway template surveys. Best fit design and layout.
14. Roadway design to ministry standards, horizontal and vertical alignment projections and template applications.
15. Base mapping, plan preparation and delivery for all functions mentioned.
16. Related and supplementary engineering activities such as: design, contract preparation, drafting, traffic engineering, structural investigations, geotechnical, drainage studies and other related activities.
17. Administering the acquisition of legal postings, legal plans, and LTO registrations; in accordance with British Columbia Land Surveyors’ regulations.

Location

The Ministry of Transportation and Infrastructures Northern Regional office is located in Prince George.

The area covered by this proposed contract will be in Ministry's Northern Region and include highways:

- 16 - Prince Rupert to the Alberta Border,
- 97 - Hixon to Dawson Creek,
- 5 - Tete Juane to Avola,
- 37 - Kitimat to the Yukon Border,
- Along with 2, 27, 29, 39, 52 and 77.

This includes all Ministry projects and gravel reserves within these areas. The Consultant may also be required to assist Ministry with work in other areas of the province.

24 - 48 hour response and mobilizations to the above areas are often required for the projects addressed by this contract.

Schedule A

Part 1 – Consultant Responsibilities

The consultant may be responsible for the following dependent on the type of assignment required on an as and when basis:

1. Primary survey control.
2. Secondary and auxiliary survey control.
3. Solid, tagged, well referenced and noted control points.
4. Static and RTK GPS surveys.
5. Total Station surveys.
6. High and low density, full corridor width surveys, topographic and planimetric.
7. Independent site specific locations such as intersection improvements, alignment revisions, road widening etc.
8. Property owner, crown land, land title and utility research. Subsequent plan acquisition and compilation.
9. Composite map acquisitions and/or preparations.
10. UTM reductions to local project grid.
11. Ensuring final digital data is compatible with ministry software.
12. DTM production in CAiCE (Civil 3D with ministry approval) to Ministry format and specification.
13. Ground modeling by string and cross section methods.
14. AutoCAD drawings.
15. Process and manipulate multimillion point bare earth LiDAR data.
16. Plan reproduction.
17. All traffic control, to WCB and MOTII specifications.
18. Possible attendance at project meetings.
19. Sites visits and joint reconnaissance meetings.
20. Liaise with Ministry staff and outside agencies.
21. Maintain the assignments on the agreed schedule.

22. Provide documentation of the assignment including a report and cost summary on completion if requested.
23. Producing and transmitting to the Ministry, timely and brief progress reports.
24. Obtaining permission to enter private property for any purpose related to the project. In the event such permission is denied, and the consultant considers that the access is necessary to complete the work, then they shall consult with the Ministry for advice.
25. Ensuring survey instruments have been maintained and all stored error corrections (e.g. collimation and tilt axis) are current.
26. Ensuring approved and technically correct survey procedures are used.
27. Ability to support and prove if requested: stated survey closures, accuracy, methodologies, the capability of equipment, and the qualifications of personnel.
28. Consideration of cost effective and innovative solutions, which have the potential of enhancing the methods, the safety of personnel, and the final product.
29. Publicizing through radio or press, notice of any traffic disruptions
30. Insurance Coverage to 5 million dollars. See Appendix E
31. WCB coverage.
32. Safe work practices.
31. Working on the Ministry's behalf with other outside agencies such as municipalities, aerial photography and LiDAR companies, utility companies, etc.
32. Providing minutes of all meetings, design reports, other reports and deliverables associated with given assignments.
33. Complete estimates of proposed assignment costs and schedule when requested.
34. Ensuring a form H0461x, INDIVIDUAL WORK ORDER, is completed before commencing assignments. See Appendix D
35. Ensuring assignments are carried out according to the requirements stated on the H0461x form.
36. Rectify errors with no additional costs to the ministry.
37. Related and supplementary engineering; survey, mapping, design, BCLS works and associated responsibilities.
38. Quality management (QC and QA) for field and office procedures.
39. Detail design and contract preparation.
40. Retaining and administering sub-consultants for activities related to assignments.
41. Experience and qualifications to deliver MoTI standard suite of mapping deliverables using unmanned aerial vehicles (UAV's).
42. Correct interpretation, applications and licensing regarding Transport Canada aviation rules when delivering products based on UAV acquisition.

Schedule A

Part 2 – Ministry Responsibilities

The Ministry will be responsible for the following dependent on the scope, type and extent of the assignment:

1. Providing written authorization to undertake specific assignments along with details on the scope, budget and schedule of assignments.
2. Providing the name of the Ministry contact for specific assignments.
3. Providing any available pertinent reports and inventories that will assist in the assignment.
4. Suggestions for, and/or determining, the origin of horizontal control and vertical datum.
5. Sample files and feature code lists.
6. Conveying Ministry's methodology regarding survey procedures, expectations, data control and presentation, drawing specifications, usage of the final product, etc.
7. Supply the Ministry's Geometric Drafting Standards for AutoCAD drawings.
8. Advising on matters regarding standards and policy.
9. Receiving data as the work progresses, as may be required, to ensure compatibility with ministry programs.
10. Continual line of communication throughout the job to help ensure the final product is suitable.
11. Approval of all scope, budget or schedule changes, as individual assignments progress.
12. Monitoring progress of assignments and, as Ministry staffing resources permit, providing input and feedback as the work progresses (such review does not in any way relieve the consultant of responsibility for errors or omissions or for the quality or accuracy of work performed).
13. From time to time during the contract, perform evaluations on the quality of work and services being provided by the Consultant. Failure to perform in an efficient manner may impact future assignments.
14. The Primary Ministry contact for this proposed contract will be Trevor Key, Survey Project Supervisor, Prince George. The Primary Ministry contact will monitor the proposed contract to ensure that works are within the contract schedule and budget and will process invoices. The Survey Manager is the primary technical resource person regarding survey issues for the Ministry.

Schedule B

Fees and Expenses

Note: This is a Two-Envelope proposal. The information requested in Schedule B should be placed in Envelope #2 and sealed. All other portions of your proposal should be submitted in Envelope #1.

Fees and expenses should be broken down as follows:

1. The names, classification and hourly charge out rates for all staff that would be assigned to this project. Those working for the consultant and those working for sub-consultants should be identified along with the type of tasks to be undertaken by the individuals, such as PEng/BCLS; Senior Technologist; Technician(instrument person); Junior Technician(field assistant); Technical processing(advanced office work); Drafting and Administration. The hourly rates provided must be all inclusive, taking into account costs such as wages, benefits, overheads, insurance, business overhead including normal field and office equipment and expendables, profit etc. Each classification will have an hourly all inclusive rate; there will be no categorized rates that reflect special situations such as overtime, travel, standby, etc.
2. Disbursement costs directly related to individual assignments (such as extraordinary materials, equipment rental, and traffic control, utility locates) will require separate approval for specific assignments and will be invoiced at cost.
3. The proposal will include pay items for the following equipment:

GPS units (each), sub cm accuracy	cost per day	_____
Total station (each)	cost per day	_____
Level (each)	cost per day	_____
Precision Terrestrial Scanner	cost per day	_____
Unmanned Aerial Vehicle (all inclusive)	cost per day	_____
Vehicle (each)	cost per day	_____
Computer (all inclusive with software)	cost per day	_____

The charge out rate for equipment is to include all ancillary equipment such as radios, reflectors, canopies, stakes, flagging, paint, etc.

4. For the purpose of this contract, assignments will be administered out of the Prince George headquarters. Reimbursement of travel, meal and accommodation expenses may occur when performing work outside a 50km radius of the consultant's respective headquarters. Cost effective reasoning should apply in determining when to seek accommodation closer to the assignment. Hotel receipts will be required.
5. Reimbursable expense rates outlined in the attached Schedule of Reimbursable

Travel Expenses, form H0461C, will apply to travel required on individual assignments, except where noted different in the Terms of Reference, and/or otherwise negotiated and approved. Reimbursement of expenses will be by submitting the form included in the H0461C. See Appendix B

6. The charge out rate of a vehicle quoted will be all-inclusive. There will be no additional reimbursement for mileage, fuel etc. In circumstances where the contractor is mobilizing a vehicle an extraordinary distance, then mileage according to the Schedule of Reimbursable Travel Expenses (H0461C), without the negotiated daily rate, will be paid one time each way for the vehicle(s) to be at the required travel destination (the point where accommodation will be reimbursed).
7. Maximum funding available for work assigned under this contract is to be \$990,000. Work will be assigned by the Ministry on an as and when needed basis. There is no guaranteed minimum amount of work that will be assigned.
8. Each work order draws down the total contract value. Individual work orders are invoiced upon completion of the task. At times it may be more appropriate to invoice a particular work order on a monthly basis.

Schedule C

Deliverables Schedule and Response Time

The contract will be for two years.

The Province may terminate the contract on ten (10) days prior written notice of termination.

While the successful contractor will have priority for assignments in their area, there is no obligation on the ministry to ensure the dollar value is met. The ministry retains the right to seek other sources for work in circumstances where particular tasks cannot be delivered by the contractor due to availability, resources, project specifications, project continuity, performance results, or monetary restraints such as costs exceeding the contract ceiling or lack of agreement to meet the ministry's project budget.

Deliverables, milestone dates, assignment schedules and payment schedules shall be negotiated separately for each assignment requested by the Ministry under this contract. The timing of Consultant Performance Evaluations will be determined on an ongoing basis throughout the life of this contract, and may not coincide with individual assignments.

The Ministry's "General Survey Guide" published in October 2013 will be used for reference and specifications, unless otherwise directed in a separate Individual Work Order (H0461x). See Appendix D

Delivery of DTMs will be required as a completed CAiCE project to Ministry format and specifications. (Civil3D may replace CAiCE with Ministry approval)

The Ministry is not obligated to give specific notice as to when assignments will be coming up, although it is recognized that as much notice as possible is helpful. The provision of timely services is critical. The consultant must make an appropriate staff member available for telephone discussion of any issue within two (2) working days of the initial request. Whenever possible the Ministry will provide two (2) working days of notice when the consultants attendance at meetings is required.

Schedule D

Personnel and Company Experience

It is anticipated that the Consultant for this project will have a multi-disciplinary team with appropriate formal training and demonstrated practical experience to undertake assignments as outlined in Schedule A. It is recognized that this may require a mix of consultant and sub-consultant expertise. Your proposal should clearly indicate how these services will be provided and effectively managed.

The consultant must identify a project manager for this assignment who will be the Ministry's point of contact on all aspects of this contract.

The consultant must have a Survey/Geomatics technologist(s) or Survey/Geomatics Engineer(s) for this assignment who will be available to execute and/or QA the various tasks within given projects.

A Survey/Geomatics Technologist is defined as someone who has graduated with a survey/geomatics diploma from a recognized institute of technology or college and is a member of ASTTBC or ASET.

Proposal Terms, Conditions and Evaluation

The Proposal should be clear and concise, and the following should be included in envelope one:

1. A brief description of the qualifications and past experience in related work of the company and its present personnel who will be assigned to the various jobs.
2. A list of sub-consultants or sub-contractors and their qualifications if plans are to engage any to complement the work.
3. An outline of technical equipment that will be used, such as survey instruments and relevant computer programs. These should include what is owned and what may be obtained otherwise.
4. Methodologies common to your field and office procedures such as processing.
5. An outline of the methods and personnel utilized for processing and data transfer.
6. A brief description of the methods used to effectively manage multiple MOTI projects.
7. The process used for the implementation of LiDAR to supplement projects.
8. The skills and assets available to complete the tasks required by the proposed contract.
9. The Consultant's project manager for this contract.

10. Details of the quality management process for field and office procedures to be used for consultant and sub-consultant work.
11. Details on measures to ensure that assignments are carried out in a cost-effective and timely manner.
12. A listing of any suggested revisions or additions to services set out in the Terms of Reference.
13. Declaration of any potential conflicts of interest.
14. Proof of WCB coverage and insurance coverage as outlined in the attached Insurance Specifications, INS-80. See Appendix E

The proposal will be evaluated based on the following criteria:

Team members' relevant skill and experience **25%**

Firm's ability to provide timely service **25%**
(Organization, management, size and proximity of the team)

Quality Management procedures **15%**

Project understanding (Cost-effectiveness, efficiencies, processes and methods including innovative methodologies and suggestions.)
Proposal presentation. **25%**

Readily available resources such as survey equipment, computers, support equipment and personnel. **10%**

Total 100%

The proposal must be a firm offer valid for 30 calendar days following its submission.

The Ministry reserves the right, at its discretion, to assign similar work to other consultants during the life of this contract.

Proposal Submission

By mail, courier or hand delivery.

Enclose **three** copies of the Proposal, any covering letter and the signed Proponent agreement in a sealed package labeled as "Envelope 1". Enclose one copy of the fees and expenses for the proposal in a sealed package labeled as "Envelope 2, Do Not Open." Submit proposal documents before 4:00 pm April 23, 2015 to:

Trevor Key
Survey Project Supervisor
Ministry of Transportation and Infrastructure
213-1011 Fourth Avenue
Prince George, BC
V2L 3H9

PROPONENT SECTION:

For hard-copy proposals, a person authorized to sign on behalf of the Proponent **must** complete and sign the Proponent Section (below), leaving the rest of this page otherwise unaltered, and include the originally-signed and completed page with the first copy of the proposal.

The enclosed proposal is submitted in response to the above-referenced Request for Proposals, including any addenda. Through submission of this proposal we agree to all of the terms and conditions of the Request for Proposals and agree that any inconsistent provisions in our proposal will be as if not written and do not exist. We have carefully read and examined the Request for Proposals and have conducted such other investigations as were prudent and reasonable in preparing the proposal. We agree to be bound by statements and representations made in our proposal.

<i>Signature of Authorized Representative:</i>	<i>Legal Name of Proponent (and Doing Business As Name, if applicable):</i>
<i>Printed Name of Authorized Representative:</i>	<i>Address of Proponent:</i>
<i>Title:</i>	
<i>Date:</i>	<i>Authorized Representative phone, fax or email address (if available):</i>

APPENDICES



This Agreement,

 MADE IN QUADRUPLICATE ON THE _____ DAY OF _____.

BETWEEN: HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA
REPRESENTED BY THE MINISTER OF TRANSPORTATION AND INFRASTRUCTURE.

Address

(hereinafter called the "Province")

POSTAL CODE

AND:

Address

(hereinafter called the "Contractor")

POSTAL CODE

Short Description:

WITNESSETH THAT the parties hereto agree to the covenants and agreements contained in paragraphs 1 through 27, inclusive, on the face and reverse side of this document and in the attached schedules set out below.

COMMENCEMENT DATE (yyyy/mm/dd)

COMPLETION DATE (yyyy/mm/dd)

ATTACHED SCHEDULES MARKED "☒" FORM PART OF THIS CONTRACT

TERMS AND CONDITIONS:**APPOINTMENT**

1. The Province retains the Contractor to provide the services (the "Services") described in the Works/Services Schedule attached hereto.

TERM

2. The Contractor will, notwithstanding the date of execution and delivery of the Agreement, start providing the Services on the commencement date and shall complete all Services to the satisfaction of the Minister by the completion date, both dates hereinbefore stated. The period of time between the aforementioned dates shall hereinafter be referred to as the "Term". Time shall be deemed to be material and of the essence of this contract.

PAYMENT

3. The Province will pay to the Contractor, in full payment for providing the Services and in full reimbursement for expenses incurred in connection therewith, the amounts, (plus any applicable taxes), in the manner and at the times set out in the Payment Schedule attached hereto and the Contractor will accept the same as full payment and full reimbursement as aforesaid.
4. The Province will pay the applicable GST on the fees and expenses incurred in connection with this contract.

- ☒ Terms and Conditions
- ☒ Works/Services Schedule - H0461a
- ☒ Payment Schedule - H0461b
- ☐ Travel Expenses (Group I) - H0461c
- ☐ Travel Expenses (Group II Mgmt) – H0461c-1)
- ☐ Special Conditions (Engineering) – H0461d
- ☐ Special Conditions (Information Systems) – H0461d-1
- ☐ Insurance Specifications – INS-80
- ☐ Insurance Specifications Professional – INS-132
- ☐ Certificate of Insurance – H0111
- ☐ Privacy Protection Schedule
- ☐
- ☐

WITNESS WHEREOF THE PARTIES HERETO HAVE EXECUTED THIS AGREEMENT THE DAY AND YEAR FIRST ABOVE WRITTEN

AFFIX CORPORATE SEAL BELOW

WITNESS AS TO THE CONTRACTOR'S SIGNATURE

SIGNATURE OF CONTRACTOR

WITNESS AS TO THE MINISTRY SIGNATURE

SIGNATURE OF DELEGATED MINISTRY AUTHORITY

ADDITIONAL TERMS AND CONDITIONS

RECORDS

5. The Contractor will:
 - a) where the Payment Schedule provides for payment determined on the basis of time, keep records of all such time; and
 - b) where the Payment Schedule provides for reimbursement of any expense, keep books of account of any such expense incurred; and the Minister of Transportation and Infrastructure (the "Minister") will have free access at all reasonable times to such records and books of account for the purposes of reviewing or copying (or both) the same.

INDEPENDENT CONTRACTOR

6. The Contractor is an independent contractor and not the servant, employee or agent of the Province of the Minister.
7. The Contractor will not, in any manner whatsoever, commit or purport to commit the Province or the Minister to the payment of any money to any person, firm or corporation.
8. The Minister may, from time to time, give such instructions as he considers necessary to the Contractor in connection with provision of the Services, which instructions the Contractor will comply with, but the Contractor will not be subject to the control of the Minister with respect to the manner in which such instructions are carried out.

REPORTS

9. The Contractor will upon the request, from time to time, of the Minister:
 - a) fully inform the Minister of work done and to be done by the Contractor in connection with provision of the Services; and
 - b) permit the Minister at all reasonable times to inspect, examine, review and copy any and all finds, data, specifications, drawings, working papers, reports, documents and materials whether complete or otherwise (collectively the "Material") that have been produced, received or acquired by, or provided by or on behalf of the Province or the Minister to, the Contractor as a result of this Agreement.

OWNERSHIP

10. The Material produced, received or acquired by, or provided by or on behalf of the Province or the Minister to, the Contractor as a result of this Agreement and any equipment, machinery or other property whatsoever (collectively the "Goods") provided by or on behalf of the Province or the Minister to the Contractor as a result of this Agreement will be the exclusive property of the Province and will, subject to the following proviso, be delivered by the Contractor to the Minister forthwith following the expiration or sooner termination of this Agreement provided that the Minister may, at any time or times prior to the expiration or sooner termination of this Agreement, give written notice to the Contractor requesting delivery by the Contractor to the Minister of all or any part of the Material or the Goods (or both) in which event the Contractor will forthwith comply with such request.
11. The copyright in the Material will belong exclusively to the Province.

CONFIDENTIALITY

12. The Contractor will treat as confidential and will not, without the prior written consent of the Minister, publish, release or disclose or permit to be published, released or disclosed either before or after the expiration or sooner termination of this Agreement, the Material or any information supplied to, obtained by, or which comes to the knowledge of the Contractor as a result of this Agreement except insofar as such publication, release or disclosure is necessary to enable the Contractor to fulfill the obligations of the Contractor under this Agreement.

ASSIGNMENT AND SUB-CONTRACTING

13. The Contractor will not without the prior written consent of the Minister:
 - a) assign, either directly or indirectly, this Agreement or any right of the Contractor under this Agreement; or
 - b) sub-contract any obligation of the Contractor under this agreement.
14. No sub-contract entered into by the Contractor will relieve the Contractor from any obligation of the Contractor under this Agreement or impose any obligation or liability upon the Province to any such sub-contractor.

CONFLICT

15. The Contractor will not, during the term, perform a service for or provide advice to any person, firm or corporation where the performance of the service or the provision of the advice may or does, in the reasonable opinion of the Minister, give rise to a conflict of interest between the obligations of the Contractor to the Province under this Agreement and the obligations of the Contractor to such other person, firm or corporation.

INDEMNITY AND STANDARD OF CARE

16. Notwithstanding any insurance coverage, the Contractor hereby agrees to indemnify and save harmless the Province, its successor(s), assign(s) and authorized representative(s) and each of them from and against those losses, claims damages, actions and causes of action, (collectively referred to as "claims") that the Province may sustain, incur, suffer or

INDEMNITY AND STANDARD OF CARE Cont'd.

16. be put to at any time either before, during or after the expiration or termination of this Agreement that arise out of errors, omissions or negligent acts of the Contractor or their Subcontractor(s) or Subconsultant(s), servant(s), agent(s), or employee(s) under this Agreement.

In completing the assignment the Contractor shall at all times exercise the standard of care, skill and diligence normally provided in the performance of services for work of a similar nature to that contemplated by this contract.

TERMINATION

17. Notwithstanding any other provision of this Agreement, the Province may, in its sole discretion, terminate this Agreement:
 - a) on ten (10) days prior written notice of termination to the Contractor and the Province will pay to the Contractor that portion of the amounts described in the Payment Schedule which is attributable to the portion of the Services completed to the satisfaction of the Province prior to the date of termination and such payment shall discharge the Province from all liability to the Contractor under this Agreement.
 - b) where in the opinion of the Province the Contractor fails to observe, perform or comply with any provision of this Agreement, and such termination will be in addition to any other rights and remedies existing or available to the Province under this Agreement or at law.

NON-WAIVER

18. No provision of this Agreement and no breach by the Contractor of any such provision will be deemed to have been waived unless such waiver is in writing signed by the Minister.
19. The written waiver by the Minister of any breach by the Contractor of any provision of this Agreement will not be deemed a waiver of such provision or of any subsequent breach by the Contractor of the same or any other provision of this Agreement.

APPROPRIATION

20. Notwithstanding any other provision of this Agreement the payment of money by the Province to the Contractor pursuant to this Agreement is subject to:
 - a) There being sufficient monies available in an appropriation, as defined in the Financial Administration Act, S.B.C. 1981, c. 15 (the Financial Administration Act, inclusive of every amendment made thereto and in force being herein collectively called the "Act"), to enable the Province, in any fiscal year or part thereof when any payment of money by the Province to the Contractor falls due pursuant to this Agreement, to make that payment; and
 - b) Treasury Board, as defined in the Act, not having controlled or limited, pursuant to the Act, expenditure under any appropriation referred to in subparagraph a) of this paragraph.

REFERENCES

21. Every reference to the Minister in this Agreement will include the Minister, the Deputy Minister of Transportation and Infrastructure and any person designated by either of them to act for or on their respective behalf with respect to any of the provisions of this Agreement.

NOTICES

22. Any notice required or permitted to be given hereunder will be delivered or mailed by prepaid registered mail to the addresses on reverse (or at such other address as either party may from time to time designate by Notice in writing to the other), and any such Notice will be deemed to be received 48 hours after mailing.
23. Either party may, from time to time, give to the other written notice of any change of address of the party giving such notice and from and after the giving of such notice the address therein specified will, for purposes of the preceding paragraph, be conclusively deemed to be the address of the party giving such notice.

MISCELLANEOUS

24. This Agreement will be governed by and construed in accordance with the laws of the Province of British Columbia. The Contractor hereby irrevocably attorns to the exclusive jurisdiction of the courts of the Province of British Columbia with respect to all matters related to this Agreement.
25. The Schedules to the Agreement are an integral part of this Agreement as if set out at length in the body of this Agreement.
26. The headings appearing in this Agreement have been inserted for reference and as a matter of convenience and in no way define, limit or enlarge the scope of any provision of this Agreement.
27. In this Agreement, wherever the singular or neuter is used, it will be construed as if the plural or masculine or feminine, as the case may be, had been used where the context or the parties hereto so require.



SCHEDULE OF REIMBURSABLE TRAVEL EXPENSES (GROUP I)

When travel expenses are listed in the Payment Schedule as an allowable expense, then transportation, meals, accommodation and board and lodging will be reimbursed provided the same are in the opinion of the Province, necessarily incurred by the Contractor in providing the work/services.

These rates will apply for the duration of the contract.

To obtain Government rates for car rental and accommodation a letter of authority signed by the Ministry contact (sample attached) is required as proof that you are under contract with the Province.

CONTRACT IDENTIFICATION NUMBER

All claims should be submitted on "Schedule of Reimbursable Travel Expenses for Contractors to Fill in Online – H1170" (see attached).

Expenses must be submitted less the Goods and Services Tax (GST) with original receipts attached.

1. TRANSPORTATION

- (a) Air Travel: Original receipts are required. The most economical airfare must be obtained. Charter flights must be pre-approved in writing by the Regional, Branch or Project Director.
- (b) Bus, Taxi, Parking, Toll Charges and Ferry: Original receipts are required, tips cannot be claimed. Ferry travel should be by the most economical route. Assured loading tickets and ferry reservations must be pre-approved in writing by the Regional, Branch or Project Director.
- (c) Vehicle Rental: Original receipts are required. The Province has negotiated Corporate Supply Arrangements (CSAs) with the following vehicle rental companies and the Corporate Identification Number below is required when requesting a vehicle, to ensure that correct rates are being applied to the rental. Original receipts are required for fuel.

It is up to the discretion of each contractor to determine which company to use for their particular need, based on the most economical rate per kilometre charge available.

- BUDGET CAR & TRUCK RENTAL – A162000
- DISCOUNT CAR & TRUCK RENTALS
- ENTERPRISE RENT-A-CAR – 4CA1000
- NATIONAL CAR RENTAL – 3614638
- RON RIDLEY RENTALS LTD – N/A

When signing the rental agreement, waive Collision or Loss Damage Waivers (CDW or LDW) and Personal Injury or Accident Insurance (PII or PAI) these costs are included in the CSAs and will not be reimbursed.

Report all accidents to the rental agency and the Ministry contract manager within 24 hours.

- (d) Private Vehicle: No receipts are required. Reimbursement for use of private vehicles will be at the rate of \$0.52/km. This is an all-inclusive rate, i.e., includes the cost of gas and insurance.
- (e) Travel expenses are not reimbursable if incurred within a 32 km radius of the Contractor's office unless pre-approved in writing by the designated Ministry contact.
- (f) Prior approval of the Regional, Branch or Project Director is required before any travel is made crossing the Provincial border.

2. MEALS

No receipts are required. Meals will be reimbursed at the following rates:

Full day per Diem	\$48.00	
Breakfast only	\$11.75	If travel starts before 7:00 am
Lunch only	\$13.50	If travel starts before noon
Dinner only	\$22.75	If travel ends after 6:00 pm
Breakfast & Lunch	\$25.25	As per above
Breakfast & Dinner	\$34.50	As per above
Lunch & Dinner	\$36.25	As per above

3. ACCOMMODATION

Original receipts are required. Accommodation expenses are reimbursed at cost, based on the maximum daily rates provided. Refer to Appendix 1 of this Schedule for details on accommodation rates.

Private lodging will be reimbursed at a rate of \$30.00/day.

Accommodation outside the Province will be at the rates pre-approved in writing by the Regional, Branch or Project Director.

4. BOARD AND LODGING

Where specifically pre-approved in writing by the designated Ministry contact, the contractor may claim \$2,000.00 per month for board and lodging in lieu of the accommodation and meal rates specified above.

APPENDIX 1 TO SCHEDULE OF REIMBURSABLE TRAVEL EXPENSES

ACCOMMODATION RATE THRESHOLDS FOR CONTRACTORS

Daily hotel/motel accommodation stays will be reimbursed at cost, not to exceed the maximum rates by city as set out below. Only the single-person provincial government rate for a standard room will be reimbursed. Proof of government-related business may be required when booking.

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Downtown Vancouver	\$130	\$130	\$130	\$130	\$160	\$170	\$175	\$175	\$170	\$130	\$130	\$130
Burnaby	\$130	\$130	\$130	\$130	\$140	\$125	\$125	\$125	\$135	\$130	\$130	\$130
Coquitlam/Port Coquitlam	\$115	\$115	\$115	\$115	\$130	\$130	\$130	\$130	\$130	\$115	\$115	\$115
Delta	\$105	\$105	\$105	\$105	\$115	\$115	\$115	\$115	\$115	\$105	\$105	\$105
Langley	\$100	\$100	\$100	\$100	\$105	\$105	\$105	\$105	\$105	\$100	\$100	\$100
New Westminster	\$125	\$125	\$125	\$125	\$140	\$140	\$140	\$140	\$140	\$125	\$125	\$125
North Vancouver	\$115	\$115	\$115	\$120	\$130	\$130	\$145	\$145	\$145	\$115	\$115	\$115
Richmond	\$115	\$115	\$115	\$115	\$125	\$125	\$140	\$140	\$140	\$115	\$115	\$115
Surrey	\$100	\$100	\$100	\$105	\$105	\$105	\$120	\$120	\$110	\$100	\$100	\$100
White Rock	\$90	\$90	\$90	\$90	\$100	\$100	\$110	\$110	\$95	\$90	\$90	\$90
Downtown Victoria	\$105	\$105	\$105	\$100	\$130	\$130	\$150	\$150	\$140	\$105	\$105	\$105
Greater Victoria*	\$95	\$95	\$95	\$95	\$105	\$125	\$125	\$125	\$125	\$95	\$95	\$95
Castlegar	\$90	\$90	\$90	\$90	\$90	\$90	\$90	\$90	\$90	\$90	\$90	\$90
Cranbrook	\$95	\$95	\$95	\$95	\$100	\$100	\$100	\$100	\$100	\$95	\$95	\$95
Dawson Creek	\$145	\$145	\$145	\$145	\$145	\$145	\$145	\$145	\$145	\$145	\$145	\$145
Fort St John	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140	\$140
Golden	\$110	\$110	\$110	\$110	\$110	\$110	\$130	\$130	\$130	\$110	\$110	\$110
Kamloops	\$100	\$100	\$100	\$100	\$110	\$110	\$115	\$115	\$115	\$100	\$100	\$100
Kelowna	\$105	\$105	\$105	\$105	\$125	\$130	\$150	\$150	\$130	\$115	\$105	\$105
Nanaimo	\$105	\$105	\$105	\$105	\$115	\$115	\$130	\$130	\$120	\$105	\$105	\$105
Nelson	\$110	\$110	\$110	\$110	\$110	\$120	\$130	\$130	\$130	\$110	\$110	\$110
Penticton	\$90	\$90	\$90	\$90	\$105	\$110	\$155	\$155	\$110	\$90	\$90	\$90
Prince George	\$110	\$115	\$115	\$115	\$115	\$110	\$110	\$110	\$110	\$110	\$110	\$110
Prince Rupert	\$80	\$80	\$80	\$80	\$90	\$90	\$95	\$95	\$95	\$80	\$80	\$80
Smithers	\$95	\$95	\$95	\$95	\$95	\$95	\$95	\$95	\$95	\$95	\$95	\$95
Terrace	\$110	\$110	\$110	\$110	\$110	\$110	\$110	\$110	\$110	\$110	\$110	\$110
Vernon	\$90	\$90	\$90	\$90	\$105	\$105	\$125	\$125	\$105	\$95	\$90	\$90
Whistler	\$185	\$195	\$195	\$145	\$105	\$105	\$115	\$115	\$105	\$105	\$105	\$145
Williams Lake	\$105	\$105	\$105	\$105	\$110	\$110	\$110	\$110	\$110	\$110	\$105	\$105
Other Cities Not Listed	\$100	\$100	\$110	\$110	\$110	\$110	\$110	\$110	\$110	\$110	\$100	\$100

*Brentwood Bay, Sidney, Victoria Westshore (Langford, Colwood), Central Saanich, Saanichton, Saanich, Esquimalt, Oak Bay



Letter of Authorization for Contractors

"Date"

To: All Authorized Province of British Columbia
Travel Industry Suppliers

Re: _____
"Contract Identification Number & Brief Description of Services"

Please be advised that: _____
"Name of Contractor"

is a contractor to the Ministry of Transportation and Infrastructure and, as such, is permitted to use provincial government rates during the term of his/her contract as follows:

_____ to _____
"Commencement Date" "Completion Date"

The contractor named above, agrees that the services or goods obtained by virtue of this letter of authorization will be used solely for services supplied to the Province of British Columbia and the cost of the service or goods will be reimbursed to the contractor by the government, at the rate(s) supplied.

Personal or other use of this letter, or services/goods provided through the use of this letter, for other than that stated in the contractor's agreement, is forbidden in accordance with the terms and conditions of the agreement.

Should you require verification of this information, or if you have any questions, please contact the undersigned
at _____
"Phone Number"

Thank you for your co-operation.

Yours truly,

"Name of Ministry Contact"

"Position Title"



SAMPLE

(<http://www.th.gov.bc.ca/forms/getForm.aspx?formid=1070>)

Transportation (Original receipts are required unless private vehicle used, then reimburse as specified in the Schedule of Reimbursable Expenses.)

* For private vehicle only.

Accommodation (Original receipts are required and are subject to daily maximums, as specified in the Schedule of Reimbursable Expenses.)

Period Covered (From – To): **TOTAL EXPENSES - Excluding GST \$**



CONTRACT IDENTIFICATION NUMBER

Where there is a conflict between the following Special Conditions and any other terms and conditions of the Consulting Services Contract and/or the Local Minor Works and Services Contract, the following Special Conditions shall prevail.

INDEMNITY

Notwithstanding any insurance coverage, the Contractor hereby agrees to indemnify and save harmless the Province, its successor(s), assign(s), and authorized representative(s) and each of them from and against those losses, claims, damages, actions and causes of action, (collectively referred to as “claims”) that the Province may sustain, incur, suffer or be put to at any time either before, during or after the expiration or termination of this Agreement, that arise out of errors, omissions or negligent acts of the Contractor or their Subcontractor(s) or Subconsultant(s), servant(s), agent(s), or employee(s) under this Agreement.

CONFIDENTIALITY

The Contractor will treat as confidential and will not, without the prior written consent of the Province, publish, release, use or disclose or permit to be published, released, used, or disclosed either before or after the expiration or sooner termination of this Agreement, the Material or any information, including pricing information, supplied to, obtained by, produced, or which comes to the knowledge of the Contractor as a result of this Agreement except insofar as such publication, release, use, or disclosure is expressly permitted by the Province, necessary to enable the Contractor to fulfill the obligations of the Contractor under this Agreement, or is required by law. Confidentiality will not extend to information which:

- (a) at the time of disclosure is in the public domain;
- (b) can be demonstrated by written evidence to have been in the possession of the Contractor prior to the Province’s disclosure thereof to the Contractor pursuant to the terms of this Agreement, provided that the Contractor was not subject to an obligation of confidence in another relationship and has the right of free and unlimited disclosure thereof; and
- (c) is furnished to the Contractor by a third party subsequent to the Province’s disclosure thereof to the Contractor pursuant to the terms of this Agreement, provided that the Contractor has no actual knowledge that the information received from such third party was received directly or indirectly from the Province and provided that the Contractor is not subject to an obligation of confidence in another relationship and has the right of free and unlimited disclosure thereof.

The Contractor will implement and maintain procedures to ensure that each employee, named professional, consultant, officer, director, agent, contractor and subcontractor of the Contractor who will perform the Services and the Assignment, or any items or parts of the Services and the Assignment will, before and after the expiration or sooner termination of this Agreement, maintain the Material or any information, including pricing information, supplied to, obtained by, produced, or which comes to the knowledge of the Contractor as a result of this Agreement in strictest confidence, and will not, without the prior written consent of the Province publish, release, use or disclose any such Material or information, except insofar as such publication, release, use, or disclosure is necessary to enable the Contractor to fulfill the obligations of the Contractor under this Agreement, or is required by law.

Without restricting the generality of the paragraphs set out above in this section entitled “Confidentiality”, the Contractor will comply with such reasonable directions as the Province may, from time to time, make and implement with respect to ensuring confidentiality, which directions may include restrictions and procedures on time and place of access and methods of reproduction of and uses of the any such Material or information.

This section entitled “Confidentiality” will survive the expiration or termination of this Agreement.

ADDITIONAL CONDITIONS

Definition:

Assignment: For the purposes of this contract, means a specified task or group of tasks, or an amount of work to be accomplished by the performance of "services" as defined herein.

The Ministry will:

Appoint a Ministry Representative, for liaison with the Contractor, to whom all notices and other correspondence and communications will be directed.

Review recommendations, proposals, schemes, sketches, layouts, estimates and any notices, inquiries or disputes submitted by the Contractor and will give written instructions or decisions to enable the timely continuation and completion of the Assignment. Make available to the Contractor the pertinent documentation of any other contract in connection with the work of the Assignment whenever it contains responsibilities required of the Contractor and if the Contractor gives notice in writing to the Ministry, of inconsistency between other contracts and the Assignment, the Ministry will resolve same, either by amendment of the other contract or by revision or addition to the Assignment and the Consulting Services Contract.

GENERAL PROVISIONS AND CONDITIONS

Approvals:

Approvals given by or on behalf of the Ministry to any study, investigation, course of action, design, schematic, drawing, detail or specification relevant to this Contract shall not relieve the Contractor of any of his responsibilities assigned to him under this Assignment.

Other Specialists:

If the Province engages the services of other specialists, the Contractor shall be entitled to rely on the skill, knowledge and documentation of such other specialists unless to do so is deemed to be unreasonable by the Minister and notice as such is provided by the Province to the Contractor.

Supplied Data:

The Contractor acknowledges that adequate discussion and access to sufficient information has transpired to enable the Contractor to undertake the performance of the Assignment. It is agreed that the Contractor shall be entitled to reasonably rely on the accuracy of the data contained in any documentation furnished by the Minister.

Implementation of Services and Liaison:

The Contractor will use the best available methods in performing the Assignment and employ the standard of care set forth in this Agreement. The Contractor shall employ only skilled and competent staff, and will not substitute those persons listed in the Works/Services Schedule or attachments thereto, without the prior written approval of the Province. The Services shall be carried out under the direct supervision of a principal or a senior member of the Contractor's staff to whom all notices will be directed.

Professional Service Requirements:

To the extent that the Assignment is of a professional nature, the Services shall be performed by a fully qualified member of the appropriate professional body duly registered to practice the profession in British Columbia when the professional body is established by a statute of the Province of British Columbia.

Codes:

The Contractor shall comply with all statutes, codes, by-laws and regulations of relevant governmental authorities.

Permits and Licences:

The Contractor shall advise and assist the Province in obtaining all approvals, permits and licences which are necessary to the Assignment from all governmental authorities.

Progress Reports:

In the absence of other directives from the Minister, the Contractor shall submit written monthly reports to the Minister on the progress in performance of the Assignment.

Disclaimer

The contents of the Material, including without limitation the results of any inspections, sampling, testing, analyses and conclusions or recommendations made by the Contractor, represent the Contractor's professional judgment at the time of preparation of the Material. The Contractor has not updated the Material since its preparation, as evidenced by the date placed on the Material.

Where the Material is prepared for the purpose, in whole or in part, of the Minister procuring the design and/or construction of a project all as outlined in the Works/Services Schedule, the project's bidders and the resulting successful bidder and construction contractor ("Authorized Users") are entitled to use and rely on the Material only for the purpose of:

- (a) submitting a bid for the Province's procurement process; and
- (b) delivering the work as the successful bidder, whether as the designer, construction contractor or both;

always subject to the project scope description in the Works/Services Schedule or attachments thereto for the Contractor's Services, if any, (together, the "Purpose").

This reliance on the Material by the Province and Authorized Users is reasonable subject to:

- (a) the Purpose for which the Material was purchased and not for use at any other sites or for any other developments to which the Material does not pertain,
- (b) there having been no material alteration to or variation made to the Material by the Province and/or Authorized User(s) without the review and consent of the Contractor,
- (c) the passage of time from the preparation of the Material,
- (d) material changes to conditions upon which the Material is based that becomes known to the Province and/or Authorized Users,
- (e) in the event the Material is a draft, uncompleted, or work in progress (as evidenced as a watermark or other notice on the Material itself) and whether by reason of the termination of this Agreement or other circumstance, the Province and/or Authorized User shall be entitled to rely on the Material to the extent reasonable in light of and in accordance with the uncompleted state of the Material,

and furthermore, any written assumptions contained in the Material that qualifies it must be first mutually agreed by the Province and the Contractor.

No other parties except the Province and the Authorized Users shall rely on the Material and the information and data therein, except with the written consent of and on the terms and conditions acceptable to the Province and the Contractor.

In the event the Province provides the Material to a third party who is not an Authorized User, without first obtaining the written consent of the Contractor to add that third party as an Authorized User, then the Province's distribution of the Material will be at the risk of the third party and/or the Province, and such distribution will place no additional risk upon the Contractor.

Both the Province and Contractor accept no responsibility, and deny any liability whatsoever, to third parties who may obtain access to the Material other than the Authorized Users for any injury, loss or damage suffered by such parties arising from their use of, reliance upon, or decisions or actions based on the Material and the information and data therein.

In the event a disclaimer is placed on the Material, any conflicts, additions, alterations and amendments to this disclaimer shall have no force or effect and the terms of this disclaimer (with any written amendments pre-approved by the Minister) will govern as between the Contractor, the Province and the Authorized Users.

Documents and Information:

The Contractor shall provide to the Minister, at any time upon request, and otherwise upon completion of the Assignment the originals of documentation, with mylar reproductions of original drawings, where so directed by the Minister, for the purpose of document reproduction and/or retention by the Province. A clean exact copy of the original documents submitted shall be retained by the Contractor.

The professional seal of the Contractor shall be affixed prior to the completion of the Assignment on the prints of drawings required for subsequent construction contract purposes.

Non-Waiver:

Payments made by the Province to the Contractor on account of the Services shall not be construed as a waiver of any right of claim the Province may have against the Contractor arising out of the Contractor's failure to perform the Services in accordance with the provisions of this Contract.

Delivery of Records:

Where the Assignment requires the delivery of documentation to the Minister, such as record drawings, manuals or other similar requirements, the last payment for basic services under this Contract will not be made until such documentation has been delivered.

Statutory Declaration:

The Province may require the Contractor, as a condition of payment, to file with the Minister a Statutory Declaration stating that the Contractor has duly satisfied all the Contractor's financial obligations to third parties in connection with delivery of the Services.

Correction of Errors:

Correction of errors or other problems attributable to the Contractor shall be the responsibility of and at the cost of the Contractor.

Resolution of Dispute:

In the event of a dispute arising under this Contract between the Contractor and the Province, the Contractor shall, within 10 working days of becoming aware of the dispute, give written notice to the Minister detailing the nature of the dispute for resolution or direction by the Minister; notwithstanding the existence of such dispute, the Contractor shall continue the prompt performance of the Services unless otherwise directed by the Minister.

Should the actions of the Minister fail to resolve the dispute to the satisfaction of the Contractor, the Contractor shall, prior to any request for arbitration or recourse in law, request in writing that the Minister reconsider the matter. The Minister shall promptly fully reconsider the matter and advise the Contractor as to its determination. If the Contractor is dissatisfied with such determination the dispute may, with the concurrence of the parties, be submitted to arbitration pursuant to the provisions of the Arbitration Act.

ASSIGNMENT AND SUCCESSORS

If the Contractor is an individual and dies or becomes incapacitated before the Assignment has been completed, this Contract shall terminate automatically as of the date of death or incapacity, and the Province will pay the Contractor's estate for the Services rendered and disbursements made up to and including the date of such termination.

If the Contractor, as an individual, should desire to engage a partner or partners, or is a partnership and desires to bring in another partner or partners to share the benefit and burden of this Assignment, or desires to permit one or more of the Partners to retire, the Contractor shall promptly notify the Minister in writing of such action(s) requesting approval.

If the Contractor is a corporation and a change of control occurs while this Contract is in force, the Contractor shall promptly notify the Province, and the Minister shall then have the option of terminating the Contract, which if terminated, the Province will pay for the services rendered and expenses incurred up to and including the date of termination.

Entire Agreement

This Agreement constitutes the sole and entire Agreement between the Province and the Contractor relating to the Assignment, and no other terms, conditions or warranties, whether express or implied, shall form a part hereof, and this Contract shall not be modified, except by subsequent agreements in writing duly signed by the Authorized Representatives of both parties.



Ministry of
Transportation
and Infrastructure

WORK ORDER

CONTRACT IDENTIFICATION NUMBER

356 CS XXX

The Contractor:

Phone:

Fax:

Contact:

Shall:

Complete survey assignments on an “as and when required” basis as described on form H0461a, in contract ID# 356CSXXX. All service requests under this contract shall be under the direction of the Ministry Representative identified in the contract. The Consultant shall not perform services as requested by any other Ministry Representative unless the Consultant receives prior approval from the Ministry Representative identified in the contract.

Future individual works/services schedules will be assigned as separate work orders on this form.

Work Assignment:

Scope – Terms of Reference:

Schedule:

Approved Disbursements:

Estimated Costs for this Assignment:

Contractor

Initials

Ministry Official

Initials



LIABILITY INSURANCES

(For all contracts except Major Works, Professional Services and Design Build Minor)

It is a condition of this contract that the Contractor shall, at the Contractor's expense, obtain and maintain insurance coverage in wording and in amounts as hereinafter specified.

1. ISSUANCE OF INSURANCE

All insurance coverage shall be issued with insurers acceptable to the Ministry, and issued by companies licensed to transact business in the Province of British Columbia and Canada. The wording, including the named insureds, under the insurance coverage may be modified to reflect the structure of the Contractor as a limited company, an individual, partnership, other entity or joint venture comprising the Contractor.

2. EVIDENCE OF COVERAGE

The Contractor shall file evidence of insurance issued to comply with the requirements outlined in these insurance specifications prior to commencement of services. Should any insurance policies expire before all other conditions of the contract have been complied with, then the contractor shall file evidence of renewal prior to the expiry date of the policy(s).

Evidence shall be as follows:

- a) For all policies, except Automobile Liability, by way of a duly completed Ministry Certificate of Insurance (H0111), which will be considered to be a part of this Schedule.
- b) For Automobile Liability insurance, either a duly executed I.C.B.C. APV47 or APV250L form, or a Ministry Certificate of Insurance.

The Contractor shall, upon request by the Ministry, file originals or signed, certified copies of all current policies and any endorsements necessary to comply with these insurance specifications and any other requirements outlined elsewhere in the contract. Failure to provide the required insurance may result in payments to the Contractor being withheld.

All documentation shall be filed with the **Ministry Office** specified in the contract.

NO OTHER CERTIFICATES OF INSURANCE ARE ACCEPTABLE

Payments to the Contractor may be withheld and/or all work on the site of the contract may be ordered to cease if the Contractor fails to obtain or maintain insurance as required herein, or if the Ministry does not approve any insurance policy or policies submitted to them and the Contractor does not comply with the insurance requirements of the contract and, the Ministry shall also have the right, but not the obligation, to place and maintain such insurance in the

name of the Contractor and the Ministry. The cost thereof shall be payable by the Contractor to the Ministry on demand, and the Ministry may deduct the cost thereof from any monies which are due, or may become due to the Contractor.

3. THIRD PARTY LIABILITY INSURANCE

Commercial General Liability insurance including non-owned automobile and contractual liability insurance shall be arranged with inclusive limits of not less than **\$5,000,000.00 and \$5,000,000.00 IN THE ANNUAL AGGREGATE** for bodily injury, death, and property damage arising from any one accident or occurrence. The insurance policy shall indemnify the named insureds under the policy for any sum or sums which the insured may become liable to pay or shall pay for bodily injury, death or property damage or for loss of use thereof, arising out of or resulting from the work of the Contractor or the Ministry under this contract, anywhere within Canada and the United States of America. In addition to the above limits, such liability insurance shall also pay all costs, charges, and expenses in connection with any claims that may require to be contested by the insureds anywhere within Canada and the United States of America.

EXTENSION OF COVERAGE

Such liability insurance shall also include all liability arising out of completed operations, blanket written contractual, contingent employers liability, non-owned automobile liability and liability assumed by the Contractor in connection with and applicable to the contract.

EXCLUSIONS NOT PERMITTED

Claims arising out of the legal liability imposed upon the insured at common law and extended by Statute for bodily injury or death to employees of the Insured. However, exclusions applicable to liability imposed upon or assumed by the Insured under any Workers' Compensation Statutes or for assessment by any Workers' Compensation Board will be allowed.

Liability assumed by the insured under contract with railroad companies for the use and operation of railway sidings or crossings.

Hazardous operations such as excavation, pile driving, shoring, blasting, under-pinning, or demolition work or any other operation or work to be performed by the Ministry or the Contractor shall not be excluded from insurance coverage, where such type of work or operation is to be performed by either party under the contract.

DEDUCTIBLES

A property damage deductible will be allowed up to **\$5,000.00** for any one accident or occurrence. Payment of any deductible shall be the responsibility of the contractor.

A BODILY INJURY OR DEATH DEDUCTIBLE IS NOT ALLOWED

ADDITIONAL CONDITIONS

Each policy (except Automobile Liability Insurance) shall be endorsed as follows:

Notwithstanding any other terms, conditions, or exclusions elsewhere in this policy, it is understood and agreed that this policy is extended to include insurance coverages and clauses as follows:

Her Majesty the Queen in Right of the Province of British Columbia as represented by the Minister of Transportation and Infrastructure, together with the employees, agents, and servants of the Minister, hereinafter referred to as the Additional Named Insured, is added as an Additional Named Insured, in respect of liability arising from the work or operations of the Insured and the Additional Named Insured, in connection with contracts entered into between the Insured and the Additional Named Insured.

The insurance as is afforded by this policy shall apply in the same manner and to the same extent as though a separate policy had been issued to each insured. Any breach of a condition of the policy by any Insured shall not affect the protection given by this policy to any other insured. The inclusion herein of more than one Insured shall not operate to increase the limit of liability under this policy.

Products and Completed Operations Hazard coverage shall be provided and such coverage shall remain in full force and effect for a period of **twelve (12)** months after the work has been completed, irrespective of the expiry date of the policy.

4. AUTOMOBILE LIABILITY INSURANCE

IF any licensed vehicles are owned, leased, rented or used in the performance of this contract, then Automobile Liability coverage with inclusive limits of not less than **\$2,000,000.00** providing third party liability and accident benefits insurance must be provided for all these vehicles.

5. PROTECTION AND INDEMNITY INSURANCE

IF vessels are operated in the course of the contract and are not covered under the general liability policy, then the Contractor shall provide Protection and Indemnity insurance applying to all vessels operated in the course of the contract with limits of not less than **\$2,000,000.00** for such vessels. Such Protection and Indemnity insurance shall include four-fourths collision liability insurance.

6. AIRCRAFT INSURANCE

IF aircraft (including helicopters) are owned, leased, rented or used in the performance of this contract, then third party liability coverage with inclusive limits of not less than **\$5,000,000.00** must be provided.

7. NOTICE OF CANCELLATION, ETC.

The required insurance shall not be cancelled, removed, reduced, materially changed or altered without thirty (30) days prior notice in writing by Registered Mail to:
The Corporate Insurance and Bonds Manager, Ministry of Transportation and Infrastructure, PO Box 9850, Stn Prov Govt, 940 Blanshard Street, Victoria, B.C. V8W 9T5.

8. USE AND OCCUPANCY

Use and occupancy of the work or any part thereof prior to the date of completion shall not be cause for any termination of insurance coverage shown in the applicable sections.

THE PROVINCE ASSUMES NO RESPONSIBILITY FOR THE ADEQUACY OF THE INSURANCE EFFECTED IN FAVOUR OF THE CONTRACTOR OR THE MINISTRY UNDER THIS AGREEMENT.