



REGIONAL DISTRICT OF CENTRAL KOOTENAY

**Area A Economic Development Commission
OPEN MEETING AGENDA**

2:00 p.m. MST

Tuesday, March 12, 2024

Location: Hybrid Model – In-person and Remote

WEBEX REMOTE MEETING INFO

To promote openness, transparency and provide accessibility to the public we provide the ability to attend all RDCK meetings in-person or remote.

Join by Video:

<https://nelsonho.webex.com/nelsonho/j.php?MTID=m6bea5316596a7697c607ab7938eed45>

Join by Phone:

+1-604-449-3026 Canada Toll (Vancouver)

Meeting Number (access code): 2772 259 6102

Meeting Password: wRsiwi2GN32

In-Person Location: Kokanee Springs Resort - lower level of the 1st Lodge building at the rear of the building, 16082 Woolgar Road, Crawford Bay, BC

COMMITTEE MEMBERS PRESENT

Director G. Jackman	Area A
Commissioner G. MacMahon	Kootenay Bay
Commissioner G. Medhurst	Crawford Bay – Chair
Commissioner P. Cullinane	Boswell
Commissioner T. Toole	Crawford Bay/Boswell
Commissioner R. Bertram	Crawford Bay/Gray Creek

STAFF PRESENT

Christine Hopkyns	Meeting Coordinator
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____ out of ____ voting Commission/Committee members were present – quorum was met.

1. CALL TO ORDER

Commissioner Medhurst called the meeting to order at [Time] p.m.

2. TRADITIONAL LANDS ACKNOWLEDGEMENT STATEMENT

We acknowledge and respect the indigenous peoples within whose traditional lands we are meeting today.

3. ADOPTION OF AGENDA

RECOMMENDATION

The agenda for the March 12, 2024 Area A Economic Development Commission meeting, be adopted as circulated.

4. RECEIPT OF MINUTES

The January 23, 2024 Area A Economic Development Commission minutes, have been received.

5. OLD BUSINESS

5.1 Kootenay Lake Geothermal Project – Economic Development Commission Funding Request

Commissioner MacMahon will provide an overview to the Commission regarding the Kootenay Lake Geothermal Project - Economic Development Commission funding request.

The Area A – Economic Development Commission Grant Application, has been received.

5.2 Area A Economic Development Commission 2024 Vision Plan

At the January 23, 2024 meeting, the Commission referred this item to the March 12, 2024 Area A Economic Development Commission meeting to allow more time for the Commission Members to prepare.

The Area A Economic Development Plan 2017 report, has been received.

The link to the Creston Housing Hub website launched by the Town of Creston has been attached for information: <https://www.creston.ca/housing-hub>

6. NEW BUSINESS

No new business.

7. PUBLIC TIME

The Chair will call for questions from the public at [Time] p.m.

8. NEXT MEETING

The next Area A Economic Development Commission meeting is scheduled for May 14, 2024 at 2:00pm MST.

9. ADJOURNMENT

RECOMMENDATION

The Area A Economic Development Commission meeting be adjourned at [Time].



REGIONAL DISTRICT OF CENTRAL KOOTENAY

Area A Economic Development Commission OPEN MEETING MINUTES

2:00 p.m. MST

Tuesday, January 23, 2024

To promote openness, transparency and provide accessibility to the public we provide the ability to attend all RDCK meetings in-person or remote.

Join by Video:

<https://nelsonho.webex.com/nelsonho/j.php?MTID=meea73c896b7a783454cd49e576561e1b>

Join by Phone:

+1-604-449-3026 Canada Toll (Vancouver)

Meeting Number (access code): 2771 709 3814

Meeting Password: mSDgSQwZ758

In-Person Location:

The Hub Pub and Eatery – 16102 BC-3A, Crawford Bay, BC

COMMITTEE MEMBERS PRESENT

Director G. Jackman	Area A
Commissioner G. MacMahon	Kootenay Bay
Commissioner G. Medhurst	Crawford Bay – Chair
Commissioner P. Cullinane	Boswell
Commissioner T. Toole	Crawford Bay/Boswell
Commissioner R. Bertram	Crawford Bay/Gray Creek

STAFF PRESENT

Kirsty Shyiak	Meeting Coordinator
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GUESTS PRESENT

Farley Cursors	Executive Director, East Shore Trail & Bike Association
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4 out of 4 voting Commission/Committee members were present – quorum was met.

1. CALL TO ORDER

Director Jackman called the meeting to order at 2:00 p.m.

2. ELECTION OF CHAIR

2.1 Election of the Area A Economic Development Commission Chair

Director Jackman announced the nominations submitted for Commissioner Medhurst.

Director Jackman called for nominations the first time.

Director Jackman called for nominations the second and third time.

No further nominations.

Commissioner Medhurst was declared the Chair for the Area A Economic Development Commission for 2024 by acclamation.

3. REGULAR AGENDA RESUMED

Chair Medhurst called the meeting to order at 2:03 p.m.

4. TRADITIONAL LANDS ACKNOWLEDGEMENT STATEMENT

We acknowledge and respect the indigenous peoples within whose traditional lands we are meeting today.

5. ADOPTION OF AGENDA

MOVED and seconded,
AND Resolved:

The Agenda for the January 23, 2024 Area A Economic Development Commission (EDC) meeting be adopted with the inclusion of Item 8.4 Area A EDC 2024 Vision Plan before circulation.

Carried

6. RECEIPT OF MINUTES

The November 3, 2023 Area A Economic Development Commission minutes, have been received.

7. OLD BUSINESS

7.1. South Kootenay Lake Community Services Society (SKLCSS) – Eastshore.Life Website

MOVED and seconded,
AND Resolved that it be recommended to the Board:

That the Board direct Staff to allocate the remaining funds from the East Shore Tourism Grant of \$1,972.94 and the Eastshore.Life Update grant of \$1,271.20 to support the Eastshore.life website updates by Garry Sly, Executive Director at South Kootenay Lake Community Services Society.

Carried

7.2. Kootenay Lake Geothermal Project – Phase Three Results (2023)

The Kootenay Lake Geothermal Project – Phase Three presentation dated January 23, 2024 from Gord MacMahon, has been received.

Commissioner MacMahon presented his results on the Kootenay Lake Geothermal Project – Phase Three Results to the Commission, as well as their vision and goals for 2024.

Commissioner MacMahon to prepare and submit a budget proposal to Area A EDC for the Kootenay Lake Geothermal Project – Phase Four prior to the next Area A EDC meeting.

8. NEW BUSINESS

8.1. Draft 2024 Budget

The Commission Report dated January, 2024 from Stuart Horn, Chief Administrative Officer, re: Area A - Economic Development Service S107 Draft 2024 Budget has been received.

The Commission deferred the final approval of the Area A – Economic Development Service S107 Draft 2024 Budget to the March 12, 2024 Area A Economic Development Commission meeting to allow further discussions.

MOVED and seconded,
AND Resolved:

That the following motion **BE DEFERRED** to the March 12, 2024 Area A Economic Development Commission meeting:

Carried

8.2. East Shore Trail & Bike Association (ESTBA) – Grant Application

The Area A – Economic Development Commission Grant Application dated October 5, 2023 from the East Short Trail and Bike Association, has been received.

Farley Cursons, Executive Director of East Shore Trail & Bike Association (ESTBA) provided the Commission with an update on ESTBA, their current grants and plan for 2024.

Farley Cursons, Executive Director of ESTBA answered the Commission’s questions.

MOVED and Seconded,
And Resolved that it be recommended to the Board:

That the Board approve the payment of the following grant from the Area A – Economic Development Commission Service S107 2023 budget:

East Shore Trail and Bike Association	\$7,642.00
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Carried

8.3. Imagine Kootenay

Director Jackman provided the Commission with an update on the Imagine Kootenay program. Imagine Kootenay will continue to be managed and administered by Community Futures Central Kootenay to keep the website functional with appropriate plug-ins for the main point of contacts to feed information to the site, from all areas.

8.4. Area A Economic Development Commission 2024 Vision Plan

The Commission referred this item to the March 12, 2024 Area A Economic Development Commission meeting to allow more time for the Commission Members to prepare.

MOVED and seconded,
AND Resolved:

That the following motion **BE REFERRED** to the March 12, 2024 Area A Economic Development Commission meeting:

Carried

9. PUBLIC TIME

The Chair called for questions from the public at 3:34 p.m.

Public submitted two questions that were answered by Director Jackman regarding the S107 draft 2024 Budget. Director Jackman will follow up by email as this member of the public was having technical difficulties and could not respond.

10. NEXT MEETING

The next Area A Economic Development Commission meeting is scheduled for March 12, 2024 at 2:00 p.m. MST.

11. ADJOURNMENT

MOVED and seconded,
AND Resolved:

The Area A Economic Development Commission meeting be adjourned at 3:38 p.m.

Carried

Approved by

Gina Medhurst, Chair



Area A – Economic Development Commission Grant Application

Contact Information:	
Organization Applying: (This is the name that will appear on the cheque issued from RDCK and is recognized on the organization's bank account.)	Date:
Mailing Address:	Amount of Financial Aid Requested: \$
City, Province:	Project Start Date:
Postal Code:	Project End Date:
Contact Person:	Contact Phone #:
Contact Email:	Contact Fax #:

About Your Proposal:
Brief Summary of Proposal:
Will this proposed activity/project be advertised and if so, how?
How will the support from Area A EDC be recognized?

Return completed application and supporting documents by email to info@rdck.bc.ca

Please see page 2 for instructions on how to complete this application.



Area A – Economic Development Commission Grant Application

Instructions for completing the Area A Economic Grant Application:

On a separate page, please outline your project plan in detail, including answers to the following:

1. What is the purpose and goal(s) of the project?
2. How does this support and help to develop the local economy or add value to the community?
3. Does this compete with already established groups or businesses?
4. How many people will be involved? Will there be a fee charged to those people?

Please list other organizations or businesses that support your idea, and attach any letters of support.

Please give brief bio/credentials of the main project leader(s).

Please attach a balanced budget for the project showing the following:

1. Show how the grant monies will be allocated
2. List other sources and amounts of funding – multiple sources are encouraged.
3. List all anticipated expenses associated with the project plan
4. If you are hiring a contractor, include one or more quotes for the project.
5. If this is not the first year for the project, please attach an Income-Expense Statement from last year.

The sponsoring society is required to provide a general statement of income and expenses for the past fiscal year. Any monies received from Area A EDC must be expended on the grant proposal within one year from the date of receipt of funds. RDCK may request copies of all receipts.

EDC will request a final report on the project within 6 months of completion, including a final Income-Expense statement showing how grant monies have been spent, and a statement about how the project did or did not complete the stated goals.

Questions?

Please call Garry Jackman, Electoral Area Director, at (250) 223-8463 or email to info@rdck.bc.ca

Kootenay Lake Geothermal Project – Phase Four Proposal
Presented to RDCK Area A EDC
March 12, 2024

1. What is the purpose and goal(s) of the project?

The Kootenay Lake area has one commercial hot spring resort and numerous hot spring occurrences, within an area recognized to have abnormally high geothermal heat flow. Research conducted through Phases One, Two and Three have resulted in a better understanding of the geological attributes of these anomalous geothermal conditions. The geological, geochemical, geophysical and geospatial programs carried out in Phases Two - Three have highlighted an area of primary interest along Crawford Creek where there is an existing hot spring (32°C).

Geological mapping in Phase Three focused on measuring the structural orientation and distribution of faults, joints or fractures to better understand and characterize the geothermal reservoir hosting the observed thermal springs. Detailed geochemistry in the Crawford Creek area provided Anion, Cation and Stable Isotope ratios to understand the hydrogeological properties of the thermal fluids and assess how these thermal fluids are intermixing with surface fresh water.

A Phase 3 temperature probe study saw the deployment of sensors at 22 locations in the vicinity of Crawford Creek to quantify heat flow variations in the area and will be retrieved this summer. A U of Victoria led ERT (Electrical Resistivity Tomography) survey in 2023 was laid out at Crawford Ck to image subsurface geological conditions to map areas of potentially fluid saturated bedrock and better understand the potential geothermal resource found there. Geospatial Drone based (UAV) surveys in the form of a Thermal Video, testing a new more efficient thermal imaging tool put forward by Selkirk College, and a Magnetometer survey to map subsurface structures and conditions likely to control geothermal fluid movement was conducted by a private BC contractor. The data from Phase 2 & 3 was assimilated into a preliminary 3D Geothermal reservoir concept model that will be refined with the data collected in Phase 4.

Phase Four will focus on the Crawford Creek area with detailed follow-up of geological mapping of the fault/fracture systems, as well as a focused and specialized geochemical (anion, cation, stable Isotope and He) sampling programs. All identified seeps and springs will be georeferenced and monitored throughout the summer. A temporal record of water properties (pH, temperature, TDS, conductivity and salinity) will be kept, documenting the influence of surface waters and the potential dilution of deeply sourced fluid when discharged at surface. Additional ERT and Magnetometer surveys will be undertaken to fill in data gaps and extend mapping beyond the 2023 survey areas. A commercial ERT survey program will image to greater depths in the subsurface than the 2023 survey. This will enable the development of a more comprehensive hydrothermal model and direct the selection of potential drilling

locations. A U of Calgary supported Thermochronology sampling program will also be conducted across two major faults at Crawford Creek to understand the timing and extent of recent fault movement (last 2-20mya) and the potential impact of that movement on the formation of late-stage fracturing and the resulting hydrothermal reservoir enhancement. Stations will also be established to measure seep and spring flow to help quantify the potential size of the geothermal resource. All collected data will be integrated into a multifaceted hydrothermal model which will help quantify the resource and provide technical support for future drilling and testing.

Encountering geothermal fluids in the 40-80°C range, with strong and sustained flow rates, could lead to the development of a commercial-based, pilot geothermal demonstration project within the next few years.

2. How does this support and help to develop the local economy or add value to the community?

Employing geological, geochemical, geophysical and geospatial technologies in the Kootenay Lake area will contribute to the overall geothermal resource's knowledge base in British Columbia and Canada, laying the foundation for potential commercial-based geothermal direct heat developments. With the successful completion of Phase Four of the Kootenay Lake Geothermal Project a predictive geological and hydrothermal model will be developed leading to the quantification of a geothermal reservoir target for drilling and testing.

A geothermal reservoir that yields sufficient heat content and fluid flow rates will present a range of Direct Heat applications prospective for the Kootenay Lake area, along with a spectrum of low carbon opportunities that would lend themselves to sustainable economic community development. Cold weather climates such as Alaska, Iceland and the Netherlands have demonstrated geothermal derived heat can sustainably grow agricultural products year-round. In 1992, the Desrochers feasibility assessment for the geothermal energy of the Bluebell Mine in Riondel envisioned nine Quonset style greenhouses (covering approximately 3,780 sq m) for a 100% capacity (year-round) greenhouse complex.

Geothermal direct heat applications have expanded greatly in recent years, providing many examples of how worldwide best practices approaches can be applied in the Central Kootenay's region. Direct heat applications would provide local employment, year-round food production, economic development and a low carbon sustainable energy source.

3. Does this compete with already established groups or businesses?

A direct heat project such as a commercial geothermal greenhouse would not compete with established groups or business but would rather complement agricultural initiatives in the Creston Kootenay Lake valley.

4. How many people will be involved? Will there be a fee charged to those people?

Please list other organizations or businesses that support your idea and attach any letters of support.

The project will be managed and supported by volunteers. Retired geologists, Gordon MacMahon and Daniel Gatto will continue to provide volunteer in-kind contributions to the project throughout Phase Three. In addition, there will be ongoing collaboration with both Selkirk College, University of Victoria, and the University of Calgary. These institutions will involve students who will use the project to gain experience and to further their education. For example, Phase Two Selkirk college student, Alec Kvarnstrom used Phase Two for his Bachelor GIS Thesis and plans to continue with a Master's degree using the project through Phase Four. A locally born student is using the ERT survey from Phase 3 to complete a Direct Studies program with the School of Earth and Ocean Science at the University of Victoria. Some administrative costs and operational expenses for both Selkirk and UCalgary are expected and are detailed in the budget attached. The University of Calgary and the University of Ottawa have provided Geochemical analytical services at reduced “not for profit” or Academic rates allowing the project to leverage funding into expanded sample programs or other disciplines in the project. Geoscience BC has also generously supported Phase 2 & 3 with increasing levels of funding and technical advisory support as well as having invited us to submit a proposal for Phase 4 funding. The following feedback was provided by Randy Hughes, Manager of Energy and Water at Geoscience BC, following the presentation of our Phase Three results to their Geothermal Technical Advisory Committee – *“The TAC was impressed and they continued to comment through the meeting on the great work you are doing and the value add of your research. They are particularly impressed as well on how much collaboration and partnering you have been able to do and how much geothermal knowledge has been gained by the various students and entities working with you. Well done. Looking forward to seeing a Phase 4 proposal!”*

Please give brief bio/credentials of the main project leader(s).

Gordon R. MacMahon, BSc, MA, Geologist Retired

Experienced professional geologist with over 40 years working in subsurface exploration, development and acquisitions. Mr. MacMahon is proficient in operational management and comfortable managing projects across a range of geotechnical environments, collaborating within a multidisciplinary team. His exposure working in mergers and acquisitions during his career has provided him with a solid foundation in business, economics, and finance.

Daniel P. Gatto, BSc, Geologist Retired

Experienced professional geologist with over 40 years working in subsurface exploration, development, acquisitions/divestitures, and equity financing both domestically and internationally. Mr. Gatto is proficient in project management, working with and leading multidiscipline technical teams and has diverse geotechnical expertise. His experience in

Investment banking and private equity have provided him with a strong foundation of full cycle asset management, business, finance, and economics.

Please attach a balanced budget for the project showing the following:

1. Show how the grant monies will be allocated

EDC funding would support the program generally, as foundational funds are often critical to securing follow-on funding. This is particularly important as the budget for Phase Four will be between \$140,000 and \$170,000. The goal in Phase Four is to gather all the remaining technical data to allow for the confirmation of 2-3 drill test locations, to be drilled in Phase Five. This means using commercial service providers for more in-depth investigations and expanded survey areas. The planned program in Phase Four also includes expanded Lidar coverage to allow for detailed terrain assessment which will lay the foundation for Phase Five logistics and planning.

2. List other sources and amounts of funding – multiple sources are encouraged.

- Received funding through the Rural Economic Diversification and Infrastructure Program (REDIP) in the amount of \$100K for two years. Over \$50K of this funding remains and is available to support Phase Four
- Apply to Geoscience BC for ~\$50K in funding (plan to submit proposal early March)
- Applied for NSERC, Applied Research and Development funding seeking \$30K in additional funding. Application submitted Feb 15, 2023
- College and Institutes Canada (CiCAN), Natural Resources Internship Program. Funding from this program will cover up to 80% of the summer student's salary. This was \$12.5K in 2023. Application timing is typically in May and after being successful in both Phase 2 and 3, the application for Phase 4 will be submitted as soon as the program is launched.
- Other potential funding sources are also being investigated

3. List all anticipated expenses associated with the project plan

Expenses associated with the project are detailed in the attached budget

4. If you are hiring a contractor, include one or more quotes for the project.

We are hiring a commercial service provider to conduct an ERT survey in 2024. The proposals received to date are similar in total potential cost (\$22.4K - \$24.7K), however there is a considerable difference in capacity between the two. For example, one contractor can do lines up to 3,200m long while the second contractor can only do lines of 800m. This difference is significant in that longer lines can image much deeper into the subsurface. The proposal from the preferred candidate (Frontier Geoscience) is attached here for your reference.

5. If this is not the first year for the project, please attach an Income-Expense Statement from last year.

See attached from SKLCSS, Garry Sly

FRONTIER GEOSCIENCES INC.

237 St. Georges Ave., North Vancouver, BC V7L 4T4

604.987.3037

February 13, 2024

Attention: Gord MacMahon, BSc, MA, PGeol.
Project Lead, Kootenay Lake Geothermal Project

RE: Proposed Electrical Resistivity Tomography Survey
Kootenay Lake Geothermal Project

We are pleased to have this opportunity to provide our proposal for geophysical surveying in support of the Kootenay Lake Geothermal Project. We understand that you require Electrical Resistivity Tomography (ERT) surveying to classify subsurface materials by resistivities, to complement an ERT program undertaken in summer 2023. The proposed 2024 program laid out in the report consists of five traverses, ranging from 200 to 600 metres in length. An 84 electrode 7.5 m electrode system can be mobilised to undertake this work.

We further understand that while the previous work has produced very detailed near surface results, it would be an advantage to employ longer line lengths and larger dipoles to increase information at depth. Possible deployment locations that reduce linecutting demands include locating a line along the old road on the south side of the creek, or possibly re-occupying Line 1, along the north side road. This would be accomplished using a tomographic 32 electrode, 100 m dipole array, with current provide by a 3.6 kW transmitter. The systems can gather induced polarisation decay information to provide chargeability sections. The 2024 data can be inverted with the 2023 data using the Aarhus Loke 3D inversion code.

Electrical Resistivity Tomography (ERT)

High density electrical resistivity tomographic surveying will map subsurface layering based on resistivities, with additional data collection of chargeabilities to aid in classifying the overburden materials. We propose to carry out the electrical resistivity profiling using a multi-electrode resistivity system. The system is an automated microprocessor-controlled transmitter-receiver, which records eight receiver channels simultaneously to speed up data collection and obtain detailed electrical resistivity profiles. The high resolution, full waveform receiver records the entire waveform providing full, 24 bit waveforms for processing. Self-potential drift, transient effects, and several other noise sources are accurately identified and removed from the signal. This allows the full waveform system to provide better results in lower signal level situations, such as higher electrode spacings, and corresponding deeper penetration in a dipole-dipole survey, or in geologic settings with unfavourable signal-to-noise levels.

Field procedure entails laying out the resistivity cables along the survey line, with the resistivity system positioned at the centre of the configuration. Metal electrodes are driven into the ground and connected to the resistivity meter by a multi-conductor wire with addressable connections. During multi-electrode surveying, a central switching system is used to address this array of electrodes. A system of high voltage relays in the central switching system allows the transmitter to utilise any pair of electrodes for current injection. For the deeper survey, current is introduced from the large transmitter external to the cable array. Similarly, the switching is accomplished by a multiplexer directing the signals from any of the field electrodes to the eight input channels of the receiver.

By means of a command file programmed in the receiver, electrode arrays including Schlumberger, Wenner, dipole-dipole, pole-dipole and pole-pole, or multiple combinations of arrays, may be chosen for execution by the system. The dipole-dipole electrode array would be used for this survey, which provides good lateral resolution of electrical resistivities.

Data reduction involves filtering of recorded data to remove negative data points and poor or unreliable data. The data are then processed using the RES2DINV or RES3DINV inversion program developed by M.H. Loke. This software utilizes a non-linear, least-squares inverse modelling approach to calculate the apparent resistivity values and depths that best fit the observed data. The model parameters are the electrical resistivity values of the subsurface model cells, while the data are the measured input currents and resulting electrical voltages measured between the surface electrodes. To increase the accuracy of the modelling process, the elevation of each electrode is incorporated into the input data file. Using the finite-element optimization method, an initial model is modified in an iterative manner so that the differences between the model responses and the data values are reduced.

Survey Layout and Positioning Information

Line cutting of the traverses will be required, prior to arrival of the geophysical survey crew. The line should be cut approximately 1 metre in width, so that field personnel with heavy backpacks can walk down the line, and clear of brush and branches so that the ground is accessible for planting electrodes. Large trees do not need to be cut down, as they can be worked around.

Positioning information will be recorded in the field. Line locations will be recorded with reference to GPS readings, chainages and physical landmarks. Relative elevation information will be recorded using inclinometer readings. Together with high quality topographic maps of the site, this should provide an adequate level of elevation control. Should absolute elevations be required, markers will be left on the traverse, such that a land survey crew can establish detailed positions and elevations.

Survey Costs

We have estimated costs to travel to the Kootenay Lake area and carry out the geophysical investigation. We have included in our cost estimate allowances for geophysical technician and field assistant, travel, survey equipment and vehicle, meals and accommodations, data interpretation and report preparation. No allowance has been made in our estimate for line cutting (if required), three or four field labourers, or GST.

Sample Survey Program (Proposed 5 line shallow program) OR (Two 3200 m lines deep program)	
Project Management	\$450.00
Equipment Preparation	800.00
Mobilization	2,160.00
Geophysical Survey Crew Day Costs – 5 days @ \$3,090.00 per day	15,450.00
Demobilization	2,160.00
Data Reduction and Interpretation	3,250.00
Survey Report	<u>500.00</u>
Total Estimated Program Cost	<u>\$24,770.00</u>

Deliverables

Deliverables include location and site plans, and ERT resistivity and chargeability volumes and profiles incorporating topography. A digital report outlining logistics information, description of equipment and methodology, data processing procedures, limitations, and discussion of results will be produced. The results can be provided in DXF or similar format for inclusion in GIS systems and engineering drawings.

We trust that this is the information you require at present. Please don't hesitate to contact us if you have any questions or would like to discuss any aspect of our proposal.

Yours sincerely,
Frontier Geosciences Inc.

Cliff Candy, P.Geo.

Kootenay Lake Geothermal Project - Phase Four Budget

Field Program - Geology						
Geology Student	Rate	Months		GST	PST	
Salary	\$ 6,100	3		\$18,300		
Vehicle expense	\$ 750	3		\$2,250		
			Sub Total	\$20,550	\$0	\$0
Equipment & Insurance						
Work vest				\$150		
Insurance, WorkSafe BC & Incidentals				\$680		
Safety line service (3 mos)				\$500		
In-Reach Subscription (3 mos)				\$135		
			Sub Total	\$1,465	\$78	\$110
Geological Program Total			Total	\$22,015	\$78	\$110
						\$22,203
Field Program - Geochemistry						
Basic Ion Geochemistry (28 samples) + Si			U of C \$15 each	\$420		
Dissolved silica (8 samples) + calibration			U of O (includes calibration and duplicates) \$22 each	\$176		
Stable Isotope ratios (20 samples)			U of C \$140 each	\$2,800		
87/86 Sr isotope (8 samples)			U of C (Physics Gp) \$110 each	\$880		
Helium Isotope (4 samples)			U of Ottawa (Cdn Academic) \$300 each	\$1,200		
Dewar Creek Trip				\$1,000		
Soil conductivity and diffusivity analysis - INRS (22 samples at \$165/ sample)				\$3,630	\$182	\$254
Thermochronology (U of C) and Thermal Modelling (15 samples @ \$1,300/ sample plus thermal modelling)				\$19,500	\$975	\$1,365
Possible Thin Section Work				\$2,500	\$125	\$175
Lab courier costs				\$1,000	\$50	\$75
Total estimated Lab Expense				\$33,106	\$744	\$1,042
SRK Consulting				\$12,000	\$600	\$840
Geochem Component Total			Total	\$45,106	\$2,676	\$3,751
						\$51,533
GIS & Geophysics Program						
Ground based geophysics, ERT Program						
2 days travel, 4 days fieldwork				\$25,000	\$1,250	\$1,750
ERT Line Clearing				\$5,000	\$250	\$350
Drone Based GIS - Selkirk College						
Researcher and Research Assistant				\$29,156		
Lidar - 1.5 Sq Kms						
Hyperspectral Test						
Data processing - student						
Selkirk Student - Alec				\$10,000		
Business Plan Development				\$10,840		
Selkirk Overhead (20%)				\$7,964		
Geotronics						
UAV Magnetometer Survey 1.5-2 sq kms with processing		1		\$12,000	\$600	\$840

Potential Funding Sources

	With NSERC
REDIP	\$50,000
RDCK	\$10,000
CiCAN	\$12,500
Geoscience BC	\$50,000
Mitacs	\$7,500
NSERC	\$30,000
Phase 3 REDIP carry over	\$13,823
Total with NSERC Budget	\$173,823
Projected Funding Shortfall	\$21,761

Mag susceptibility rental		\$400	\$20	\$28	
GIS and Geophysics Program Total	Total	\$100,360	\$2,120	\$2,968	\$105,448
Modelling and Project Management					
3D Modelling - Fracture/Fault - Leapfrog Preliminary Static Model		\$12,000	\$600	\$840	
Stakeholder engagement		\$500	\$0	\$0	
In-kind professional services - project set-up and execution	~ 500 hours	\$0			
Administration (South Kootenay Lake Community Services Society)		\$2,100	\$0	\$0	
Modelling, Management and Administration Total	Total	\$14,600	\$750	\$1,050	\$16,400
PROJECT TOTAL		Grand Total			\$195,584

South Kootenay Lake Comm Service Society

PO Box 182
16150 Walkley Road
Crawford Bay, BC, V0B 1E0

Item 5.1

Job Profit & Loss Statement

2023-01-01 through 2024-03-01

Page 1

Account Name	Selected Period	Budgeted
Phase 3	Phase 3 Geothermal	
Income		
RDCK EDC AREA A Grant	\$10,000.00	\$0.00
REDIP Grant	\$99,985.00	\$0.00
CICAN Grant	\$12,786.43	\$0.00
Geoscience grant	\$30,000.00	\$0.00
Total Income	<u>\$152,771.43</u>	
Expense		
General Supplies	\$1,556.87	\$0.00
Tools & Equipment/Machines	\$2,387.49	\$0.00
Lab Analysis	\$6,024.40	\$0.00
Business & Promotion	\$257.25	\$0.00
License & Registration	\$184.80	\$0.00
Postage & Shipping	\$400.00	\$0.00
Administration Fee	\$665.44	\$0.00
Transportation	\$555.90	\$0.00
Accommodation	\$2,867.61	\$0.00
Project Mgmt/Coord Fees	\$5,882.00	\$0.00
Project Contractor/Labour	\$14,072.00	\$0.00
Profession/Business Services	\$22,595.38	\$0.00
Telephone/Cell	\$190.41	\$0.00
Event Facility Rental	\$52.50	\$0.00
Payroll Expenses	\$1,594.57	\$0.00
Total Expense	<u>\$59,286.62</u>	
Net Profit (Loss)	<u>\$93,484.81</u>	

Area A Economic Development Plan 2017

Current model:

- resource extraction and export with minimal value added - prevents job growth and innovation
- tourism provides steady income for well established businesses and marginal return on investment for others
- construction industry provides local jobs for loosely knit industry, many trades not available without paying premium travel time
- underground economy in decline - significant reduction in local cash flow over past several years
- somewhat random approach to injection of stimulus funding through EDC, local grants, CBT funds, federal community works funds or other one time funding opportunities
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Sustainable model:

- meet today's needs without limiting the ability of future generations to meet their needs
- stable, well integrated population who's needs are met
- existing facilities and amenities are maintained in a high quality, serviceable state
- emerging needs of population and businesses are identified and met
- coordinate distribution of grants, maximize leveraged funds by identifying and applying to major funding sources
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Transition:

- identify opportunities for growth/succession/transition
- identify gaps and make adjustments
- shift to value added on all extracted resources
- recognize value of amenity migrants - retired cohort invest their equity in new or renovated homes, working cohort provide labour force for business growth plus start new businesses
- build community support groups and amenities to attract innovative residents
- enhance access to natural amenities to attract residents and tourists

- ensure needs of residents in all demographic groups (youth to senior) are reasonably supported to improve quality of life for existing residents and demonstrate area is attractive as a long term home for new residents
- access paid resources to support EDC activities - examples are: research and draft applications for major funding opportunities; facilitate community sessions for input and feedback on plans; research general trends and needs; record, track and update documentation used to develop plan(s)
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