STAFF REPORT

File No.: LA 6500-20
(OCP/LUB Review)

DATE OF MEETING:	April 15, 2019
TO:	Lasqueti Island Local Trust Committee
FROM:	Sonja Zupanec, Island Planner Northern Team
SUBJECT:	qathet Regional District 2019 Agricultural Land Use Inventory and Agricultural Water Demand Model

RECOMMENDATION

1. **That the Lasqueti Island Local Trust Committee request staff to prepare a work plan and budget for the OCP/LUB Review Project – Agricultural Land Use Inventory and Agricultural Water Demand Model and request funding confirmation in the amount of $2,000 for the 2019/20 fiscal year.**

2. **That the Lasqueti Island Local Trust Committee request staff to notify the Ministry of Agriculture and qathat Regional District that the Lasqueti Island Local Trust Committee wishes to be a signatory to the Memorandum of Understanding for the 2019 Agricultural Land Use Inventory (ALUI) and Agricultural Water Demand Model (AWDM) project and, upon funding confirmation, that the Local Trust Committee will contribute $2,000 for Lasqueti Island ALUI and AWDM report and a presentation.**

REPORT SUMMARY

The purpose of this report is to inform the Lasqueti Island Local Trust Committee (LTC) of a project currently being initiated by the qathet Regional District (qRD) to complete an Agricultural Land Use Inventory (ALUI) and Agricultural Water Demand Model (AWDM) for the region. Staff recommends that the LTC consider being a signatory to this project with the Ministry of Agriculture (MoA) and qRD and contributing $2,000 to ensure a Lasqueti Island specific report and presentation is completed as part of the study.

BACKGROUND

The Ministry of Agriculture coordinates ALUI and AWDM projects in regional districts across British Columbia, including islands in the Islands Trust. In 2018 the Agricultural Advisory Committee of the qRD requested support towards completing an ALUI for the qRD. A regional agrologist from the MoA advised that this type of work could be done and that funding was available through the Investment Agriculture Foundation (IAF). The qRD Board approved $5,000 and submitted an application to IAF for an additional $10,000 to ensure the completion of the work for the region. Although the scope of the work would include a general overview of Lasqueti Island, more detailed analysis would not be conducted unless the LTC contributes the suggested funding. The project charter for the Lasqueti Official Community Plan (OCP) and Land Use Bylaw (LUB) Review Project currently includes a review of policies and regulations pertaining to land in the Agricultural Land Reserve (ALR) and could benefit from the results of the ALUI and AWDM project.

An Agricultural Land Use Inventory (ALUI) is a template report product produced by the MoA and provides current data to inform local governments on developing issues on farmland (see Attachment 2). ALUI's identify the amount and type of farming in the region, describe how farmland is being used including the level of non-farm uses, and

provide a benchmark for monitoring land use change. ALUI data is a key input into an Agricultural Water Demand Model (AWDM) that estimates agriculture water demand for future climate scenarios. Securing appropriate water allocation for current and future agricultural needs is necessary for long-term sustainability of the farming community.

The Lasqueti Local Trust Area has approximately 700 hectares (1700 acres) of land in the ALR as well as non-ALR land being used for agricultural activities. An analysis of current orthophotos, zoning, and BC Assessment data and field work would be used to complete the ALUI and AWDM reports for Lasqueti Island and the qRD. As a signatory to the MOU, the LTC can request some customization of the reporting structure and secure an in-person presentation of the final results. For reference, the MoA, Capital Regional District and Saltspring Island Local Trust Committee completed an ALUI and AWDM in 2017.

FUNDING

A contribution of $2,000 from the Local Trust Committee OCP/LUB Review Project budget was suggested by the geospatial team leader at the MoA. The contribution and signatory to the MOU would ensure the completion of a Lasqueti Island specific ALUI and AWDM report and in-person presentation by the MoA agrologist and geospatial team. If funding is confirmed by May 2019, the field work will commence immediately for the qRD, including Lasqueti Island, and is intended to be completed by fall 2019.

Rationale for Recommendation

Staff recommend the LTC be a signatory to the Memorandum of Understanding and contribute financially to the ALUI and AWDM project as per the recommendations included on Page 1 of the report.

ALTERNATIVE

The LTC may consider the following alternative to the staff recommendation:

1. **Receive for information**

   The LTC may receive the report for information.

NEXT STEPS

If the LTC concurs with the staff recommendation, staff will prepare a budget request and workplan and notify the qRD and MoA staff when funding is confirmed. A copy of the MOU will be presented to the LTC for signature at a future date.

Submitted By:	Sonja Zupanec, MCIP, RPP Island Planner	April 5, 2019
Concurrence:	Ann Kjerulf, MCIP, RPP Regional Planning Manager	April 8, 2019

ATTACHMENTS

1. ALUI Overview and Sample MOU

Farming for Info: Agricultural Land Use Inventory & Agricultural Water Demand Model

A healthy agriculture sector provides economic development opportunities, fresh food to residents, and enhances local food security, however there is strong evidence that barriers to farming are increasing. Non-farm uses and residential estate uses on farmland are factors which contribute to rising costs of leasing or purchasing farmland. In addition, the availability of water is a critical element to the success of agriculture.

An Agricultural Land Use Inventory (ALUI) provides current data to inform local governments, industry, community groups/organizations, and other stakeholders when addressing existing and developing issues on farmland. ALUI's map the amount and type of farming in the region, describe how designated farmland (ALR) is being used including the level of non-farm uses, and provide a benchmark for monitoring land use change.

ALUI data is a key input into an Agricultural Water Demand Model that estimates agriculture water demand for future climate scenarios. Climate change and a growing population are challenging water supply and delivery infrastructure. Securing appropriate water allocation for current and future agricultural needs is necessary for long-term sustainability of the farming community.

Together, an ALUI and AWDM can help answer the following questions:

- What is the current extent, type, location, and scale of agricultural activities in the area?
- What is the current extent, type, location of value added activities (agritourism, events, processing, farm gate sales) occurring on farmed properties?
- How are current farmed properties being utilized; land proportion in cropped land, farm infrastructure, residences, natural / nonproductive land?
- How is parcel size, parcel location influencing utilization for agriculture?
- What is the current extent and type of non-farm use occurring on farmland?
- What is the current water demand for agriculture, both crops and livestock?
- What is the current extent and type of irrigation methods in use?
- What is the water demand for agriculture in future climate scenarios?
- What is the water demand for agriculture in future cropping and livestock scenarios (ex. full land base utilization)?

Project timing / methodology:

Over the winter and spring, office technicians use high resolution ortho-photo imagery to map field crops, irrigation, livestock facilities, farm practices, and other land uses on agricultural land across the region.

Then, during the summer (growing season), agrologists will navigate public roads and observe the land from within the vehicle to confirm information gathered in the office from the imagery (i.e. windshield survey).

Farmers are not actively contacted, but the survey crew often engages with farmers that walk up to the survey vehicle.

Deliverables include:

A geographic database of Land use and Land cover, including non agricultural uses where they occur on designated farmland (ALR) such as residential, commercial, transportation for all parcels in the ALR or outside the ALR but with Farm Class designation (BC Assessment).

On parcels where farming activities exist, additional data describing activities, including

- Crop type and practice
- Irrigation type
- Livestock type and intensity (including apiculture, aquaculture)
- Value added activities such as on farm fruit stands, crop processing, tourism activities like guest houses or wine tasting.
- Crop protection such wind machines (frost protection) or propane cannons

A written ALUI report using the standard template as defined by the Ministry of Agriculture or a web application displaying ALUI data summaries and mapping .

A populated Agricultural Water Demand Model (AWDM) for at least 5 different water demand scenarios including:

- by crops, irrigation systems and soil texture with current land use and climate;
- if more efficient irrigation systems replace the existing systems under current land use and climate;
- if irrigated acreage is increased; and
- the above with several different future climate change scenarios.

Partial funding is available through Investment Agriculture's Agricultural Area Planning Program and/or the Partnership for Water Sustainability in BC. The BC Ministry of Agriculture often coordinates and manages ALUI and AWDM projects in partnership with the local government.

For more information:

Corrine Roesler
BC Ministry of Agriculture
Phone: 604 556 3110
Corrine.Roesler@gov.bc.ca

qathet Regional District

Agricultural Land Use Inventory
Proposed for 2019

qRD - EA A

qRD - EA A

qRD - EA B

qRD - EA C

qRD - EA D

qRD - EA E

TLA'AMIN NATION

POWELL RIVER

SECHELT BAND LANDS (COKQUENEETS) NO 23

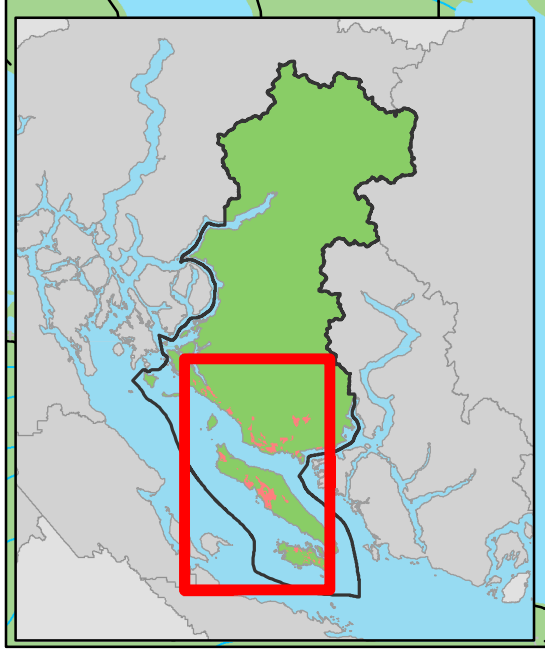
Brew Bay

Lang Bay

Saltery Bay

TEXADA ISLAND

LASQUETI ISLAND



Area of Interest

- within ALR (702 parcels, 12,018 Ha)
- outside ALR (72 parcels, 750 Ha)

- First Nations Lands
- Indian Reserves
- Powell River
- Electoral Areas

N

5

Kilometers

Memorandum of Understanding

between

Ministry of Agriculture (AGRI)

1767 Angus Campbell Road
Abbotsford, BC V3G 2M3

And

Partnership for Water Sustainability in BC (PWSBC)

34951 High Drive
Abbotsford, BC
V2S 2X7

And

XX Local Government (XXXX)

for

Agricultural Land Use Inventory (ALUI)
Agricultural Water Demand Model Development (AWDM)
in agricultural areas of xx

Version date: January 00, 2019

WHEREAS:

A. Agricultural Land Use Inventories (ALUIs):
- record land uses and land cover in farming areas and act as a benchmark for monitoring change;
- improve understanding of agricultural land use within the Area;
- identify the impacts of proposed policies and regulations on agriculture;
- assist land use decision-making including official community plan and bylaw updates;
- help identify challenges and opportunities to enhance agriculture and food security;
- identify opportunities for greater land use and resource compatibility
- help evaluate riparian management areas.

B. One of AGRI's missions is to promote sustainable food and agriculture systems that are part of British Columbia's economic, environmental and social fabric. Agriculture systems require a reliable supply of good quality water to prosper. This requirement may increase if climate change results in changed rainfall patterns.

C. AGRI and Agriculture and Agri-food Canada have developed the Agriculture Water Demand Model (AWDM) which provides scientific estimates of agricultural water demand for current and future land use and climate scenarios. The AWDM is the tool of choice to help establish agriculture water reserves throughout the province.

D. The AWDM requires data collected as part of an ALUI as well as a continuous climate grid and soils data for the area of interest.

E. The PWSBC is a not for-profit society incorporated in November 2010, with a mandate to promote efficient water use and sustainable water resources in the province of British Columbia.

F. PWSBC is helping the Province implement the Living Water Smart initiative which has made a commitment to reserve water for the agriculture sector.

G. AGRI and PWSBC have entered into a shared cost arrangement to complete AWDMs in select areas of British Columbia in 2019.

H. AGRI and PWSBC wish to complete an AWDM in XXXX in 20XX assuming land use inventory, a continuous climate grid, and soils data for the region is available.

I. AGRI, PWSBC, and XXXX wish to enter into this Memorandum of Understanding to record their mutual understanding of the scope of the project (the "Project"), to record the role that each will perform to complete the Project, and to facilitate the transfer of data and funds required to complete the scope of services as outlined below.

NOW, THEREFORE the Parties agree that:

1. Business Arrangement

1.1 XXXX will provide $XX,XXX in funds to the Project to complete tasks as outlined in Schedule 1.

1.2 AGRI and PWSBC will collaborate to complete the tasks as outlined in Schedule 1 in accordance with the Memorandum of Understanding between AGRI and PWSBC for ALUI and AWDM development.

1.3 AGRI and PWSBC will contribute in-kind resources such as data, technologies, equipment, staff time and travel expenses to this Project as necessary to complete the tasks as outlined in Schedule 1.

1.4 XXXX will provide temporary access to data and imagery necessary to complete the tasks as outlined in Schedule 1.

1.5 Date of project completion and deliverables is dependent on availability of AGRI resources which may be affected by unforeseeable events such as wildfire.

2. Invoicing and Payment

2.1 Funds provided by XXXX are payable to the PWSBC.

2.2 The total amount payable by XXXX will not exceed $XX,XXX plus applicable taxes.

2.3 PWSBC will submit one invoice to XXXX before September 01, 2019 and XXXX will provide payment before November 15, 2019.

3. Term and Termination

3.1 The Term of this Agreement shall be deemed to be effective as of XXXX XX, 2019 and shall expire upon provision of written notice by either party.

3.2 The Parties may also extend the Term of this Agreement by written amendment.

3.3 Either party may terminate this Agreement by giving thirty days written notice.

4. Entire Agreement

4.1 This Agreement represents the entire agreement between the parties and supersedes all previous or contemporaneous letters, understandings, or agreements between the Parties related to the development of an ALUI and AWDM.

4.2 No modification of this Agreement shall be valid unless in writing and signed by each of the Parties hereto.

IN WITNESS WHEREOF the Parties have executed this Agreement on the date written below.

On behalf of the BC Ministry of Agriculture	**On behalf of the Partnership for Water Sustainability in BC**	**On behalf of the XXXX**
Willow Minaker Director, Strengthening Farming	Ted van der Gulik, President	
Name	***Name***	***Name***
Signature	***Signature***	***Signature***
Date	***Date***	***Date***
Innovation and Adaptation Services Branch 3rd Floor – 808 Douglas Street Victoria, BC V8W 9B4	Partnership for Water Sustainability in BC 34951 High Drive, Abbotsford, BC V2S 2X7	XXXX

Schedule 1

Agricultural Land Use Inventory (ALUI)

1. The boundaries of the study area are defined as the geographic extent of the XXXX Regional District including member municipalities and Indian reserves.

2. The inventory will include all parcels in the study area which:
   - are completely or partially in the ALR, or
   - have BC Assessment farm classification, or
   - have a declared agricultural interest (agriculture lease/license, water license/irrigation, livestock homesite for grazing license), or
   - are greater than one acre, privately owned (includes municipal or federal owned), and zoned to allow agriculture or have observable agriculture upon driveby.

   Note: Crown owned parcels outside the ALR are not included. Grazing on crown owned parcels will be indicated by Grazing licenses and other external data sources.

   Note: Marine aquaculture operations are not included unless defined by a legal parcel

3. AGRI will conduct the ALUI to the AGRI "AgFocus" specifications for data collection, methodology and personnel requirements.

4. XXXX will provide temporary access to existing data ***where feasible*** that will aid the Project, such as:
   - high resolution, colour ortho photography (digital),
   - cadastral fabric with parcel attributes (property ID [PID, PIN], tax roll, tax jurisdiction) (GIS),
   - parcel civic address with attribute relation to cadastral fabric (GIS),
   - parcel ownership (private, crown) with attribute relation to cadastral fabric (GIS),
   - regionally designated uses on the land (GIS); ex. regional and municipal parks,
   - local government zoning/bylaws with attribute relation to cadastral fabric or in GIS format, and zone/bylaw descriptions,
   - jurisdictional boundaries: electoral areas, municipalities, Indian reserves, official community plan and/or zoning boundaries (GIS),
   - schools, fire halls, police and other institutional sites in the ALR,
   - improvement districts that provide irrigation water for agriculture,
   - agriculture/aquaculture related locations (building permits, licenses, leases, etc.),
   - BC Assessment data for parcels completely or partially in the ALR OR with property class of "Farm" (property class, actual use, land exemption code, land value, improvement value, if possible residential presence and size) with Parcel ID (PID) and Jurisdiction / Roll (or Juroll).

5. AGRI will provide data where feasible that will aid the Project, including but not limited to:
   - Agricultural Land Reserve boundaries (GIS),
   - high resolution, colour ortho photography (digital),
   - vegetation resources inventory (VRI) (GIS),
   - terrain resources inventory mapping (TRIM) (GIS),
   - provincially designated uses on the land: parks, tree farm licenses, Crown leases, Crown grazing licenses, etc. (GIS),
   - water license point of diversions and water works features (GIS),
   - grassland, wetland, and stream classification (GIS).

6. AGRI will prepare a topological, parcel based GIS dataset with a unique identifier for each polygon ("GIS Parcel Dataset") that covers the study area.

7. AGRI will prepare a land cover based GIS dataset with preliminary high level land cover descriptions ("GIS Land Cover Dataset").

8. AGRI will prepare a suite of field survey maps ("Survey Maps") including overview maps (digital and paper), field survey maps (digital and paper), and geocoded maps (for moving map software).

9. AGRI will provide an AgFocus survey entry system for field data capture.

10. AGRI will provide a recognized ALUI professional in the area of agrology ("Agrologist") and two technicians for approximately 6 weeks to conduct a ground based field survey.

11. PWSBC may contract the ALUI professional and technician as directed by AGRI. PWSBC will manage contracts and pay invoices and expense claims as approved by AGRI.

12. AGRI will provide necessary training to the Survey Crew and other staff on conducting an AgFocus ground based field survey. AGRI will provide ongoing remote technical support as necessary.

13. AGRI will arrange equipment necessary for the ground field survey. This includes but is not limited to:
    - a laptop and/or iPad with Oziexplorer and/or AvenzaPDF software,
    - a GPS receiver compatible with Oziexplorer software,
    - AgFocus field guide, plant identification reference book.

14. AGRI will arrange a survey vehicle with comfortable seating for three people and good visibility for the ground field survey. The vehicle will come equipped with safety equipment such as flashing beacon (if necessary), signage, radio (if necessary), sign out-check in procedures (if necessary).

15. The Survey Crew will deliver collected data to AGRI on a weekly basis. AGRI will provide quality assurance and feedback to the survey crew. If possible, AGRI will provide an Agrologist to field check approximately 5% of the parcels surveyed to promote continuous improvement.

16. AGRI will run integrity and logical checks on field data and then create the final ALUI dataset.

17. AGRI will deliver the final ALUI dataset to the XXXX in a format compatible with ESRI ArcGIS 10.x.

18. AGRI will complete an ALUI Standard Report for the study area as in kind resources allow. The final report may be a web application (ArcGIS online) and/or pdf format report and may be posted on the Ministry of Agriculture website.

Agricultural Water Demand Model (AWDM)

19. AGRI and PWSBC will define the boundaries of the AWDM considering the availability of data.

20. AGRI will obtain a gridded climate and soils dataset for the area of interest.

21. PWSBC may develop soils data as required by the AWDM, if and where feasible.

22. AGRI will compile the ALUI data, water licence data, animal water use data, and build out scenarios for the area of interest.

23. PWSBC will develop a parcel level AWDM using the compiled data as defined above. If soils data is not available, the AWDM may be developed with default values and updated when soils becomes available.

24. AGRI will produce an AWDM report (written document). If the AWDM was developed with default values, the report will be considered draft. The AWDM report will be finalized when soils data becomes available.

25. The AWDM report will be posted on the Ministry of Agriculture website, and linked to the PWSBC website.

26. The AWDM report will provide summary results of irrigation demands for at least 5 different scenarios including:

- by crops, irrigation systems and soil texture with current land use and Year 2003 climate;
- if more efficient irrigation systems replace the existing systems under current land use and Year 2003 climate;
- if irrigated acreage is increased; and
- the above with several different future climate change scenarios.

The AWDM report will not provide results on individual properties.

27. PWSBC may contract the AWDM consultant, soil data consultant, climate consultant, or contract other tasks as directed by AGRI. PWSBC will manage contracts and pay approved invoices submitted by the contractors.

28. XXXX may contract the AWDM consultant to develop and report additional scenarios developed by the Agricultural Water Demand Model on a cost recovery basis.

Data sharing

29. AGRI is subject to the requirements of the Freedom of Information and Protection of Privacy Act (British Columbia) ("FOIPPA"), which includes specific provisions relating to the collection and use of Personal Information (as that term is defined in FOIPPA). No Personal Information will be collected as part of the ALUI or included in the final ALUI Dataset.

30. AGRI and XXXX will jointly own all intellectual property in the ALUI Dataset for the area within XXXX.

31. AGRI and PWSBC agree to use any data provided to the Project under this MOU for internal purposes only and shall not disclose, sell, license, loan, gift or dispose of the Data or copies of the Data to others. AGRI shall not de-compile, disassemble, reverse engineer, copy, transfer or otherwise use the Data for any purpose other than the Project.

32. AGRI will destroy all data provided to the Project under this MOU except for the final ALUI Dataset.

33. AGRI and XXXX may distribute the final ALUI Dataset.

Appendix A - Release of Final ALUI Data - Terms of Use Agreement

A. Data Name: *XXXX ALUI 2019*
B. Data Extent and Currency: *Agricultural Land Reserve and other agricultural areas, Summer 2019*
C. Data Description: *spatial parcel fabric without cadastral attributes, tabular Agricultural Land use Inventory*
D. Data Condition: *< ex. preliminary draft which may be incomplete or contain errors and/or omissions; standard quality control processes are currently underway with final data products expected by summer 2018>*
E. Pre-existing data sharing agreements:
F. Cadastre data source: *Parcel Map BC*

By using the digital files containing the data as specified in A, B, C and D above (the "Data") the undersigned person / organization / corporation (the "User") is acknowledging and agreeing to the following:

1. The User is in strict accordance with any pre-existing data sharing and licensing agreements as listed in E above.
2. The User has written permission to receive the cadastral data associated with the Data from all parties as listed in F above.
3. The User agrees to use the Data for internal purposes only and shall not disclose, sell, license, loan, gift or dispose of the Data or copies of the Data to others. The User shall not de-compile, disassemble, reverse engineer, copy, transfer or otherwise use the Data for any purpose other than in accordance with these Terms of Use.
4. The User agrees to acknowledge the BC Ministry of Agriculture as the source of data on any publication, presentation, analysis, and/or mapping product created using the Data.
5. The User agrees to provide the BC Ministry of Agriculture with an opportunity to review any publication, presentation, analysis, and/or mapping product created using the Data before that product is released publicly.
6. The User acknowledges and understands the following limitations on the Data:
    a. The Data is derived from the Ministry of Agriculture's (AGRI) Agricultural Land Use Inventory (ALUI) System. The ALUI System employs a "windshield" survey method which captures data visible from publicly accessible lands and roads. Where visibility is limited, data may have been interpreted from aerial photography, in combination with local knowledge.
    b. The data captures a snapshot in time of land cover and land use on legal parcels. Legal parcel descriptions, land use and land cover may have changed since the dataset was collected.
    c. The data is based on legal land parcels. Farming operations may utilize more than one legal land parcel and therefore the area of a farm operation cannot be determined using this data.
    d. Capturing production management practices using a "windshield" survey method is very difficult. Practices such as propane exploders, wind machines, crop storage and manure storage are captured if visible. Environmental practices such as manure handling or spreading, fertilizer application, and pesticide application are not captured.
    e. Capturing the type and number of livestock on a property using a "windshield" survey method is very difficult. Livestock often are in buildings or at the back of the property and therefore not seen. Also, livestock move from property to property and while they may be present one day on one property, they could be present on a different property the next day resulting in over counting. For many properties, livestock type and a range of the number of animals present was estimated using a number of methods including barn size and local knowledge. Using this data to extrapolate livestock farm management practices or environmental impacts from individual parcels is invalid.
7. The User acknowledges and agrees to the following limited warranty and limitation on rights and remedies:
    f. The BC Ministry of Agriculture provides the Data to the User "as is," without warranty of any kind, express or implied, including but not limited to the implied warranties of accuracy, completeness, currentness, reliability, and fitness for any particular purpose with respect to the Data and any accompanying written materials;
    g. In no event shall the BC Ministry of Agriculture be liable to the User or any other party for losses or damages, including any loss of profits, lost savings, injury to property, or other incidental or consequential damages arising out of the Data, including but not limited to financial losses from reliance on Data, loss or corruption of Data, and computer viruses, or the User's inability to use the Data, even if the Ministry has been advised of the possibility of such damages, or for any claim by any other party.

These Terms of Use are effective until terminated by the Ministry of Agriculture, with or without cause, in the Ministry of Agriculture's sole and unfettered discretion by giving written notice to the User. The Ministry of Agriculture may terminate the User's license if the User fails to comply with any of these terms. Any such termination by the Ministry of Agriculture shall be in addition to and without prejudice to such rights and remedies as may be available to the Ministry of Agriculture. Immediately upon termination of the license, the User shall destroy any and all copies of the Data in its possession. The disclaimers, limitations on liability, ownership, termination, waiver, warranty and the indemnity provisions of these Terms of Use shall survive the termination of the license. These Terms of Use are governed by the laws of British Columbia. These Terms of Use constitute the entire agreement between the parties pertaining the subject-matter hereof. If any part of these Terms of Use is found to be unenforceable, then that part will be severed so that the remainder of these Terms of Use can continue to be enforceable.

I, _____ (the User), as a representative of_____ (the Company), agree to these

Terms of Use for the purpose of _____ (the Project).

_____ Signature _____Date