

## Scoping a Mission-Oriented Innovation approach in British Columbia

From: Mazzucato, Mariana <m.mazzucato@ucl.ac.uk>  
To: Bobbi.Plecas@gov.bc.ca, Ravi JERI:EX Parmar <Ravi.Parmar@gov.bc.ca>, rebecca.ponting@gov.bc.ca, jedc.minister@gov.bc.ca, Minister, JERI JERI:EX <JERI.Minister@gov.bc.ca>, Parmar, Ravi JERI:EX <Ravi.Parmar@gov.bc.ca>, Ponting, Rebecca JERI:EX <Rebecca.Ponting@gov.bc.ca>, Plecas, Bobbi JERI:EX <Bobbi.Plecas@gov.bc.ca>  
Cc: Marois, Thomas <t.marois@ucl.ac.uk>, Tonkin, Sean <sean.tonkin@ucl.ac.uk>, IIPP.DIR-CoS <iipp-dircos@ucl.ac.uk>, Kattel, Rainer <r.kattel@ucl.ac.uk>, Conway, Rowan <rowan.conway@ucl.ac.uk>, Bartlett.IIPP-Director-PA <iipp-director-pa@ucl.ac.uk>  
Sent: April 22, 2021 10:08:48 AM PDT  
Attachments: BC Proposal\_Final\_April 2021.pdf

**[EXTERNAL] This email came from an external source. Only open attachments or links that you are expecting from a known sender.**

Dear Minister Kahlon and Deputy Minister Plecas,  
Please find attached a proposal for IIPP engagement with the Government of British Columbia and, specifically, the Ministry of Jobs, Economic Recovery and Innovation. You will see that we propose an intensive programme organised into three stages between now and October 2021.  
The shape and content of the proposal reflects several key influencing factors we have understood from our conversations with BC.

- We are initially working within a very constrained timeframe
- The Government is committed to working with IIPP within this timeframe
- BC wants to better understand mission-oriented innovation strategies and grand challenges government-wide
- BC wants this engagement to feed into their Economic Plan<sup>s.13</sup>
- s.13

As you will see in the proposal, our priority is to help identify and assist the identification of BC grand challenges, and then to begin laying the groundwork for related mission-oriented policy pathways. s.13

s.13

Rowan and Thomas would be pleased to walk you through the details of the programme.

Best,  
Mariana

Mariana Mazzucato

Professor in the Economics of Innovation and Public Value  
Founding Director, Institute for Innovation and Public Purpose (IIPP)  
University College London (UCL)  
11 Montague Street, London, WC1B 5BP  
United Kingdom  
Executive Assistant  
IIPP-Director-PA@ucl.ac.uk | Tel +44 (0) 203 108 6173

Twitter: @MazzucatoM

The Value of Everything: making and taking in the global economy  
The Entrepreneurial State: debunking public vs. private sector myths  
Mission Economy: a moonshot guide to changing capitalism

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Withheld pursuant to/removed as

s.12 ; s.13

## Team

UCL IIPP is uniquely equipped to take on such a project. This is evident by our work that bolsters the importance of publicly funded and mission driven institutions. Our core team would comprise the following:

**Professor Mariana Mazzucato**  
**Founding Director of the UCL Institute for Innovation & Public Purpose (IIPP)**

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**Professor Rainer Kattel**  
**Deputy Director at IIPP**

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**Rowan Conway**  
**Research Fellow and Head of Policy Partnerships, IIPP**

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**Thomas Marois**  
**Senior Research Fellow Patient Finance and Public Banking, IIPP**  
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**Dr Olga Mikheeva**  
**Marie Curie Research Fellow in Public Banking, IIPP**  
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Withheld pursuant to/removed as

s.17

## COST BENEFIT JUSTIFICATION

DESCRIPTION OF SERVICES: Strategic and technical advice on	ESTIMATED CONTRACT BUDGET: \$ 350,000
The design and application of a novel approach to economic development and government support for innovation	CONTRACT TERM / TIMING: May 2021 to May 2022

Where options are to be considered for obtaining the most cost effective approach to obtaining **Services Greater than \$100,000** the following Cost Benefit Analysis Templates should be used.

**Cost Benefit Analysis Templates:** (If required, click on hyperlink to create template, print and attach.)

- ☐ [Cost Benefit Summary Template](#)
- ☐ [Cost Benefit Viable Alternatives Template](#)
- ☐ [Cost Benefit for Client Implications \(Non-Quantitative\) Template](#)

Where there are no options but to contract out for obtaining **Services Greater than \$100,000** provide justification.

**No Options But To Contract Out:** (Check all that apply and provide justification below to support selection.)

- ☒ No expertise / technology available within the Ministry.
- ☐ No staff resources available.
- ☐ Ministry no longer in the business of providing these services.
- ☒ Objective private sector or third party opinion required.
- ☐ An unforeseeable emergency exists and did not have time to create a cost benefit analysis.
- ☐ Cost benefit analysis not provided due to confidentiality.
- ☐ Shared cost agreements or shared public private partnerships.
- ☐ Other – please explain below.

**Justification:** (Attach additional pages if required.)

Professor Mariana Mazzucato (PhD), is Professor in the Economics of Innovation & Public Value at University College London (UCL), she is the Founding Director of the UCL Institute for Innovation & Public Purpose. Through her work at UCL, Professor Mazzucato has developed a novel approach for governments to deliver public value and economic benefit through a structured system of challenges and missions implemented across the organization. The provincial government wishes to employ this novel approach in the development and implementation of a long term economic plan for British Columbia.

Professor Mazzucato advises policy makers around the world on IIPP's innovation-led inclusive and sustainable growth approach. Her current roles include being Chair of the World Health Organization's Council on the Economics of Health for All and a member of the Scottish Government's Council of Economic Advisors, the South African President's Economic Advisory Council, the OECD Secretary General's Advisory Group on a New Growth Narrative, the UN High Level Advisory Board for Economic and Social Affairs, Argentina's Economic and Social Council, Vinnova's Advisory Panel in Sweden, and Norway's Research Council. Previously, through her role as Special Advisor for the EC Commissioner for Research, Science and Innovation (2017-2019), she authored the high-impact report on Mission-Oriented Research & Innovation in the European Union, turning "missions" into a crucial new instrument in the European Commission's Horizon innovation programme.

The province wishes to receive the advice of Professor Mazzucato in implementing the approach she developed and piloted. Her expertise and experience is not available from other sources and it is unlikely she would perform these services outside of the structure of IIPP. The perspectives and advice built from unique assignments implementing her system is not otherwise present in the marketplace.

Tim Lesiuk

PRINT MANAGER'S NAME AND TITLE

MANAGER'S SIGNATURE



Ref: 154426

May 18, 2021

Mariana Mazzucato  
Professor in the Economics of Innovation and Public Value  
Founding Director, Institute for Innovation and Public Purpose  
University College London  
11 Montague Street, London, WC1B 5BP  
United Kingdom  
Email: [M.Mazzucato@ucl.ac.uk](mailto:M.Mazzucato@ucl.ac.uk)

Dear Professor Mazzucato:

I am pleased to inform you that we have issued a Foreign Service Agreement (contract) for the project "Scoping a Mission-Oriented Innovation Approach in British Columbia."

This scoping project will use the Institute for Innovation and Public Purpose's (IIPP) Mission Oriented Innovation ROAR Framework (Routes and directions, Organizational capacity, Assessment and evaluation, Risks and rewards) to focus on potential challenge and mission direction setting for the British Columbia (BC) Government. To do this, IIPP will run an applied learning, scoping, and research project in which we would explore ways to collaborate with stakeholders (government, industry, and civil society) to define challenges and missions, based on the BC guiding principles of a sustainable, innovative, and inclusive society.

The project will run from June 2021 until March 2022 and is for an awarded value of \$345,785.47 CAD. I will provide you with a draft public communication of the project and your role in advising the Province, for release upon joint execution of the Agreement. I look forward to receiving your further comments on the draft Agreement and draft announcement text.

Sincerely,

Bobbi Plecas  
Deputy Minister

## Letter from Deputy Minister Bobbi Plecas

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From: JERI DM JERI:EX <JERI.DM@gov.bc.ca>  
To: M.Mazzucato@ucl.ac.uk  
Sent: May 18, 2021 10:33:21 AM PDT  
Attachments: 154426 Signed.pdf

Please find attached a letter from Bobbi Plecas, Deputy Minister, Ministry of Jobs, Economic Recovery and Innovation.

Thank you,

Office of the Deputy Minister  
Ministry of Jobs, Economic Recovery and Innovation





May 26, 2021

Contract Number: #FC22UCL01

## FOREIGN SERVICE AGREEMENT

THIS AGREEMENT is dated for reference the first day of June, 2021.

BETWEEN:

UNIVERSITY COLLEGE LONDON, (the "Contractor") with the following specified address:  
Gower Street, London WC1E 6BT, United Kingdom  
lipp-research@ucl.ac.uk

AND:

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, (the "Province")  
as represented by the Minister of Jobs, Economic Recovery and Innovation with the following specified  
address and email:  
8th floor, 1810 Blanshard Street, Victoria, BC, Canada  
V8T 4J1  
Bobbi.Plecas@gov.bc.ca

The Province wishes to retain the Contractor to provide the services specified in Schedule A and, in consideration for the remuneration set out in Schedule B, the Contractor has agreed to provide those services, on the terms and conditions set out in this Agreement.

As a result, the Province and the Contractor agree as follows:

### 1 SERVICES

- 1.1 The Contractor must provide the services described in Schedule A attached to this Agreement (the "Services") in accordance with this Agreement.
- 1.2 Regardless of the date of execution or delivery of this Agreement, the Contractor must provide the Services during the term as set in Schedule A (the "Term").
- 1.3 Unless the parties otherwise agree in writing, the Contractor must supply and pay for all labour, materials, equipment, tools, facilities, approvals and licenses necessary or advisable to perform the Contractor's obligations under this Agreement, including the license under section 4.5.
- 1.4 Unless otherwise specified in this Agreement, the Contractor must perform the Services to a standard of care, skill and diligence maintained by persons providing, in a university setting, services similar to the Services.

- 1.5 The Contractor must ensure that all persons employed or retained to perform the Services are qualified and competent to perform them and are properly trained, instructed and supervised.
- 1.6 The Contractor may subcontract any of the Contractor's obligations under this Agreement to any person listed in the attached Schedule A or who has the Province's prior written consent (a "Subcontractor"). No subcontract entered into by the Contractor will relieve the Contractor from any of its obligations under this Agreement or impose any obligation or liability upon the Province to any such Subcontractor.
- 1.7 The Province may from time to time give the Contractor reasonable instructions (in writing or otherwise) as to the performance of the Services. The Contractor must comply with those instructions but, unless otherwise specified in this Agreement, the Contractor may determine the manner in which the instructions are carried out.
- 1.8 In the performance of the Contractor's obligations under this Agreement, the Contractor must comply with all applicable laws including, without limitation, those of the United Kingdom that may be applicable to this Agreement.

## **2 PAYMENT**

- 2.1 If the Contractor complies with this Agreement, then the Province must pay to the Contractor at the times and on the conditions set out in Schedule B attached to this Agreement:
- (a) the fees described in that Schedule, plus any applicable taxes; and
  - (b) the expenses, if any, described in that Schedule if they are supported, where applicable, by proper receipts and, in the Province's opinion, are necessarily incurred by the Contractor in providing the Services.

The Province is not obliged to pay to the Contractor more than the "Maximum Amount" specified in Schedule B on account of fees and expenses.

- 2.2 In order to obtain payment of any fees and expenses under this Agreement, the Contractor must submit to the Province a written statement of account in a form satisfactory to the Province upon completion of the Services or at other times described in Schedule B.
- 2.3 The Province's obligation to pay money to the Contractor is subject to the *Financial Administration Act*, R.S.B.C. 1996, c. 138, as may be amended or replaced from time to time, which makes that obligation subject to an appropriation being available in the fiscal year of the Province during which payment becomes due.
- 2.4 Without limiting section 10.10(a), the Contractor must not in relation to performing the Contractor's obligations under this Agreement commit or purport to commit the Province to pay any money except as may be expressly provided for in this Agreement.

## **3 REPRESENTATIONS AND WARRANTIES**

- 3.1 As at the date this Agreement is executed and delivered by, or on behalf of, the parties, the Contractor represents and warrants to the Province as follows:
- (a) except to the extent the Contractor has previously disclosed otherwise in writing to the Province,
    - (i) all information, statements, documents and reports furnished or submitted by the Contractor to the Province in connection with this Agreement (including as part of any competitive process resulting in this Agreement being entered into) are in all material respects true and correct,
    - (ii) the Contractor has sufficient trained staff, facilities, materials, appropriate equipment and approved subcontractual agreements in place and available to enable the Contractor to fully perform the Services, and

- (iii) the Contractor holds all permits, licenses, approvals and statutory authorities issued by any government or government agency that are necessary for the performance of the Contractor's obligations under this Agreement; and
- (b) if the Contractor is not an individual,
  - (i) the Contractor has the power and capacity to enter into this Agreement and to observe, perform and comply with the terms of this Agreement and all necessary corporate or other proceedings have been taken and done to authorize the execution and delivery of this Agreement by, or on behalf of, the Contractor, and
  - (ii) this Agreement has been legally and properly executed by, or on behalf of, the Contractor and is legally binding upon and enforceable against the Contractor in accordance with its terms except as enforcement may be limited by bankruptcy, insolvency or other laws affecting the rights of creditors generally and except that equitable remedies may be granted only in the discretion of a court of competent jurisdiction.

#### 4 MATERIAL AND INTELLECTUAL PROPERTY

##### 4.1 In this Agreement:

- (a) "Incorporated Material" means any material in existence prior to the start of the Term or developed independently of this Agreement, and that is incorporated or embedded in the Produced Material by the Contractor or a Subcontractor;
- (b) "Material" means the Produced Material and the Received Material;
- (c) "Produced Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are produced by the Contractor or a Subcontractor and includes the Incorporated Material; and
- (d) "Received Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are received by the Contractor or a Subcontractor from the Province or any other person.

##### 4.2 If the Contractor receives a request for access to any of the Material from a person other than the Province, and this Agreement does not require or authorize the Contractor to provide that access, the Contractor must promptly advise the person to make the request to the Province.

##### 4.3 The Province exclusively owns all property rights in the Material which are not intellectual property rights. The Contractor must deliver any Material to the Province immediately upon the Province's request.

##### 4.4 The Province exclusively owns all intellectual property rights, including copyright, in:

- (a) Received Material that the Contractor receives from the Province; and
- (b) Produced Material, other than any Incorporated Material.

Upon the Province's request, the Contractor must deliver to the Province documents satisfactory to the Province that: (i) irrevocably waive in the Province's favour any moral rights which the Contractor (or employees of the Contractor) or a Subcontractor (or employees of a Subcontractor) may have in the Produced Material, except that any such person waiving such moral rights (the "Author") in respect of Produced Material that has been modified by or on behalf of the Province, may require the removal of their name from the relevant Produced Material and/or a statement to be included at the beginning of the Produced Material stating that they are not responsible for its content; and that (ii) confirm the vesting in the Province of the copyright in the Produced Material, other than any Incorporated Material.

##### 4.5 Upon any Incorporated Material being embedded or incorporated in the Produced Material and to the extent that it remains so embedded or incorporated, the Contractor grants to the Province:

- (a) a non-exclusive, perpetual, irrevocable, royalty-free, worldwide license to use, reproduce, modify and distribute that Incorporated Material; and

- (b) the right to sublicense to third-parties the right to use, reproduce, modify and distribute that Incorporated Material.

4.6 Notwithstanding the ownership provisions in sections 4.3 and 4.4, the Contractor retains the non-exclusive, irrevocable right to use the Material, and to license its collaborators to use the Material, for the purposes of academic research and teaching.

## **5 CONFIDENTIALITY**

5.1 The Contractor must treat as confidential all information in the Material and all other information accessed or obtained by the Contractor or a Subcontractor (whether verbally, electronically or otherwise) as a result of this Agreement, and not permit its disclosure or use without the Province's prior written consent except:

- (a) as required to perform the Contractor's obligations under this Agreement or to comply with applicable laws;
- (b) if it is information that is generally known to the public other than as result of a breach of this Agreement; or
- (c) if it is information in any Incorporated Material.

5.2 Any public announcement relating to this Agreement will be arranged by the Province and, if such consultation is reasonably practicable, after consultation with the Contractor.

5.3 The Contractor must not, without the prior written approval of the Province, refer for promotional purposes to the Province being a customer of the Contractor or the Province having entered into this Agreement.

## **6 RECORDS, REPORTS AND AUDIT**

6.1 Upon the Province's request, the Contractor must fully inform the Province of all work done by the Contractor or a Subcontractor in connection with providing the Services.

6.2 If Schedule B provides for the Contractor to be paid fees at a daily or hourly rate or for the Contractor to be paid or reimbursed for expenses, the Contractor must maintain time records and books of account, invoices, receipts and vouchers of expenses in support of those payments, in form and content satisfactory to the Province. Unless otherwise specified in this Agreement, the Contractor must retain such documents for a period of not less than seven years after this Agreement ends.

6.3 In addition to any other rights of inspection the Province may have under statute or otherwise, the Province may at any reasonable time and on reasonable notice to the Contractor, enter on the Contractor's premises to inspect and, at the Province's discretion, copy any of the Material and the Contractor must permit, and provide reasonable assistance to, the exercise by the Province of the Province's rights under this section.

## **7 INDEMNITY AND INSURANCE**

7.1 Subject to section 7.4, the Contractor must indemnify and save harmless the Province and the Province's employees and agents from any losses, claims, damages, actions, causes of action, costs and expenses that the Province or any of the Province's employees or agents may sustain, incur, suffer or be put to at any time, either before or after this Agreement ends, including any claim of infringement of third-party intellectual property rights, where the same or any of them are based upon, arise out of or occur, directly or indirectly, by reason of any act or omission by the Contractor or by any of the Contractor's agents, employees, officers, directors or Subcontractors in connection with this Agreement, excepting always liability arising out of the independent acts or omissions of the Province and the Province's employees and agents.

7.2 The Contractor must comply with the Insurance Schedule attached as Schedule D.

7.3 Without limiting the generality of section 1.8, the Contractor must comply with, and must ensure that any Subcontractors comply with, all applicable occupational health and safety laws in relation to the performance of the Contractor's obligations under this Agreement.

7.4 The Contractor's aggregate liability under or in connection with this Agreement (including under the indemnity given in section 7.1), and whether arising in contract, tort, or otherwise, shall not exceed the amount due to the Contractor under Schedule B.

## **8 FORCE MAJEURE**

8.1 In this section and sections 8.2 and 8.3:

(a) "Event of Force Majeure" means one the following events:

- (i) a natural disaster, fire, flood, storm, epidemic or power failure,
- (ii) a war (declared and undeclared), insurrection or act of terrorism or piracy,
- (iii) a strike (including illegal work stoppage or slowdown) or lockout, or
- (iv) a freight embargo

if the event prevents a party from performing the party's obligations in accordance with this Agreement and is beyond the reasonable control of that party; and

(b) "Affected Party" means a party prevented from performing the party's obligations in accordance with this Agreement by an Event of Force Majeure.

8.2 An Affected Party is not liable to the other party for any failure or delay in the performance of the Affected Party's obligations under this Agreement resulting from an Event of Force Majeure and any time periods for the performance of such obligations are automatically extended for the duration of the Event of Force Majeure provided that the Affected Party complies with the requirements of section 8.3.

8.3 An Affected Party must promptly notify the other party in writing upon the occurrence of the Event of Force Majeure and make all reasonable efforts to prevent, control or limit the effect of the Event of Force Majeure so as to resume compliance with the Affected Party's obligations under this Agreement as soon as possible.

## **9 DEFAULT AND TERMINATION**

9.1 In this section and sections 9.2 to 9.4:

(a) "Event of Default" means any of the following:

- (i) an Insolvency Event,
- (ii) the Contractor fails to perform any of the Contractor's material obligations under this Agreement, or
- (iii) any material representation or material warranty made by the Contractor in this Agreement is untrue or incorrect; and

(b) "Insolvency Event" means any of the following:

- (i) an order is made, a resolution is passed or a petition is filed, for the Contractor's liquidation or winding up,
- (ii) the Contractor commits an act of bankruptcy, makes an assignment for the benefit of the Contractor's creditors or otherwise acknowledges the Contractor's insolvency,
- (iii) a bankruptcy petition is filed or presented against the Contractor
- (iv) a receiver or receiver-manager is appointed for any of the Contractor's property, or
- (v) the Contractor ceases, in the Province's reasonable opinion, to carry on business as a going concern.

- 9.2 On the happening of an Event of Default, or at any time thereafter, the Province may, at its option, elect to do any one or more of the following:
- (a) by written notice to the Contractor, require that the Event of Default be remedied within a time period specified in the notice;
  - (b) pursue any remedy or take any other action available to it at law or in equity; or
  - (c) by written notice to the Contractor, terminate this Agreement with immediate effect or on a future date specified in the notice, subject to the expiration of any time period specified under section 9.2(a).
- 9.3 No failure or delay on the part of the Province to exercise its rights in relation to an Event of Default will constitute a waiver by the Province of such rights.
- 9.4 In addition to the Province's right to terminate this Agreement under section 9.2(c) on the happening of an Event of Default, the parties may terminate this Agreement by mutual written agreement.
- 9.5 Unless Schedule B otherwise provides, if the parties terminate this Agreement under section 9.4:
- (a) the Province must, within 30 days of such termination, pay to the Contractor any unpaid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that was completed to the Province's satisfaction before termination of this Agreement; and
  - (b) the Contractor must, within 30 days of such termination, repay to the Province any paid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that the Province has notified the Contractor in writing was not completed to the Province's satisfaction before termination of this Agreement or which portion was prepaid to the Contractor and was not expended by the Contractor in performance of the services.
- 9.6 The payment by the Province of the amount described in section 9.5(a) discharges the Province from all liability to make payments to the Contractor under this Agreement.
- 9.7 If the Contractor becomes aware that an Event of Default has occurred or anticipates that an Event of Default is likely to occur, the Contractor must promptly notify the Province of the particulars of the Event of Default or anticipated Event of Default. A notice under this section as to the occurrence of an Event of Default must also specify the steps the Contractor proposes to take to address, or prevent recurrence of, the Event of Default. A notice under this section as to an anticipated Event of Default must specify the steps the Contractor proposes to take to prevent the occurrence of the anticipated Event of Default.

## **10 MISCELLANEOUS**

- 10.1 In the event of any dispute between the parties arising out of or in connection with this Agreement, the parties may attempt to resolve the dispute through collaborative negotiation.
- 10.2 Any notice contemplated by this Agreement, to be effective, must be in writing and delivered as follows:
- (a) by email to the addressee's email address specified on the first page of this Agreement, in which case it will be deemed to be received on the day after transmittal;
  - (b) by hand to the addressee's address specified on the first page of this Agreement, in which case it will be deemed to be received on the day of its delivery; or
  - (c) by prepaid courier to the addressee's address specified on the first page of this Agreement, in which case, it will be deemed to be received on the tenth day after it is sent.
- 10.3 Either party may from time to time give notice to the other party of a substitute address or email address, which from the date such notice is given will supersede for purposes of section 10.1 any previous address or email address specified for the party giving the notice.

- 10.4 The Contractor must not assign any of the Contractor's rights under this Agreement without the Province's prior written consent.
- 10.5 A waiver of any term or breach of this Agreement is effective only if it is in writing and signed by, or on behalf of, the waiving party and is not a waiver of any other term or breach.
- 10.6 No modification of this Agreement is effective unless it is in writing and signed by, or on behalf of, the parties.
- 10.7 This Agreement (including any modification of it) constitutes the entire agreement between the parties as to performance of the Services.
- 10.8 The schedules to this Agreement (including any appendices or other documents attached to, or incorporated by reference into, those schedules) are part of this Agreement.
- 10.9 Sections 1.8, 2.1 to 2.4, 4.1 to 4.5, 5.1 to 5.3, 6.1 to 6.3, 7.1, 7.2, 8.1 to 8.3, 9.2, 9.3, 9.5, 9.6, 10.1 to 10.3, 10.9 and 10.10, any accrued but unpaid payment obligations, and any other sections of this Agreement (including schedules) which, by their terms or nature, are intended to survive the completion of the Services or termination of this Agreement, will continue in force indefinitely, even after this Agreement ends.
- 10.10 In relation to the performance of the Contractor's obligations under this Agreement, the Contractor is an independent contractor and not:  
(a) an employee or partner of the Province; or  
(b) an agent of the Province except as may be expressly provided for in this Agreement.  
The Contractor must not act or purport to act contrary to this section.
- 10.11 The Contractor must not do anything that would result in personnel hired or used by the Contractor or a Subcontractor in relation to providing the Services being considered employees of the Province.
- 10.12 The Contractor must not provide any services to any person in circumstances which, in the Province's reasonable opinion, could give rise to a conflict of interest between the Contractor's duties to that person and the Contractor's duties to the Province under this Agreement.
- 10.13 Time is of the essence in this Agreement and, without limitation, will remain of the essence after any modification or extension of this Agreement, whether or not expressly restated in the document effecting the modification or extension.
- 10.14 If there is an inconsistency between a provision in a schedule and any other provision of this Agreement, the provision in the main body of the Agreement will prevail (unless the provision in the schedule specifically says it takes precedence).
- 10.15 This Agreement does not operate as a permit, license, approval or other statutory authority which the Contractor may be required to obtain from the Province or any of its agencies in order to provide the Services in any jurisdiction. Nothing in this Agreement is to be construed as interfering with, or fettering in any manner, the exercise by the Province or its agencies of any statutory, prerogative, executive or legislative power or duty.
- 10.16 If any provision of this Agreement or the application of it to any person or circumstance is invalid or unenforceable to any extent, the remainder of this Agreement and the application of such provision to any other person or circumstance will not be affected or impaired and will be valid and enforceable to the extent permitted by law.
- 10.17 Each party must perform the acts, execute and deliver the writings, and give the assurances as may be reasonably necessary to give full effect to this Agreement.

- 10.18 Any additional terms set out in the attached Schedule F apply to this Agreement.
- 10.19 This Agreement shall be governed by and construed in accordance with the laws of the Province of British Columbia and the laws of Canada applicable therein.
- 10.20 In this Agreement, "person" includes an individual, partnership, corporation or legal entity of any nature and unless the context otherwise requires, words expressed in the singular include the plural and *vice versa*.
- 10.21 Tax Verification – any terms set out in the attached Schedule H apply to this Agreement.

## 11 EXECUTION AND DELIVERY OF AGREEMENT

- 11.1 This Agreement may be entered into by a separate copy of this Agreement being executed by, or on behalf of, each party and that executed copy being delivered to the other party by a method provided for in section 10.2 or any other method agreed to by the parties.

The parties have executed this Agreement as follows:

<p>SIGNED on the 7<sup>th</sup> day of June, 2021 by the Contractor (or, if not an individual, on its behalf by its authorized signatory or signatories):</p> <div style="text-align: center; margin: 10px 0;">  </div> <p>Signature(s)</p> <p><u>Christoph Lindner</u> Print Name(s)</p> <p><u>Professor, Dean of The Bartlett (UCL)</u> Print Title(s)</p>	<p>SIGNED on the 8th day of June, 2021 on behalf of the Province by its duly authorized representative:</p> <div style="text-align: center; margin: 10px 0;">  </div> <p>Signature</p> <p><u>Bobbi Plecas</u> Print Name</p> <p><u>Deputy Minister</u> Print Title</p>
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## **Schedule A – Services**

### **PART 1. TERM:**

1. Subject to section 2 of this Part 1, the term of this Agreement commences on June 1, 2021 and ends on March 31, 2022.
2. The term of this agreement may be extended for up to one additional year upon mutual agreement of the Parties.

### **PART 2. SERVICES:**

The Province is embarking on a path to align our economy with the long term social and environmental objectives important to British Columbians. The challenges we face today require the coordinated effort of all the tools of government to overcome. Beyond the immediate economic recovery, the Province intends to identify clear directions for growth over the medium term (the next ten to twenty years) and to use all of government's levers to tackle these challenges. In doing so, the Province intends to cultivate new industrial opportunities and redesign foundational industries for success in future global markets.

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Specifically, the Province is seeking the services of the Contractor to deliver:

1. Six to ten engagements with the Premier and Cabinet as well as with Provincial Executive to introduce and explore the concepts of Challenge Driven Policy and Mission Oriented Innovation.
2. Scoping the challenges and missions process (by July 31, 2021):
  - Undertake desk research, interviews and a mapping workshop to understand and scope the potential of a pan-government project that could be set up in a structured way;
  - Needs assessment and readiness audit;
  - Internal document review;
  - Interviews and background research;
  - Assess the viability of a mission-oriented approach;
  - Map local and provincial innovation actors, including public, private, and civil society organisations.
3. In collaboration with the Province, assist in the identification of grand challenges, and laying the groundwork for related mission-oriented policy pathways, including the development of principles and recommendations to inform challenges and missions (in draft by July 31, 2021 and final by September 1, 2021):
  - Review and provide recommendations on the Province's key challenges that a mission-oriented approach could address;
  - Advise on key mission-aligned and mission-important sectors, and relevant geographical and content links between industries;
  - Ensure relatedness and circularity between mission projects, sectors and actors;
  - Support phrasing and focus of BC challenges.
4. Cross-government workshop on applying market-shaping lenses to innovation (by July 31, 2021):

- employing the ROAR framework: ROUTES AND DIRECTION; ORGANISATIONAL CAPACITY; ASSESSMENT AND EVALUATION, and RISKS AND REWARDS to understand optimal methods for developing market-shaping public purpose approaches;
  - Applying IIPP market-shaping vs market-fixing models to identify public value creation opportunities.
5. Capacity building for market-shaping and public purpose immersion (by September 1, 2021):
- a live masterclass on Zoom led by Mariana Mazzucato which can be streamed thereafter on YouTube to additional stakeholders who are unable to attend – the content will cover market shaping, dynamic capability evaluation, rethinking public value and the ROAR framework. Discussion will focus on identifying clear priorities for BC.
    - Zoom Masterclass in Mission Oriented Innovation
    - Mission Oriented Innovation primer for stakeholders
    - Discussion on setting clear priorities

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8. A Principles and Recommendations summary report of the process and set of recommendations to guide BC government policy on future government-wide and aligned mission-oriented approach (in Draft by October 1, and final by November 11, 2021)

### Outputs

The Contractor must make the resources specified in the Inputs section of this Schedule A available as reasonably requested by the Province during the contract term.

The Contractor must provide a draft of the report identified as Deliverable 8 to the Province for review by September 1, 2021. The Contractor must provide a final report identified as Deliverable 8 to the Province for review by October 11, 2021.

### Inputs

The Contractor must provide the following resources:

Resource	Role
New Post 0.4fte	Project Management, Network and Co-ordination
Rowan Conway 0.4fte	Lead on IIPP Mission Oriented Innovation
Dr. Thomas Marois 0.5fte	Co-Investigator
Dr. Olga Mikheeva 0.4fte	Researcher
New Post 1.0fte	Post-Doctoral Researcher
Laurie Mcfarlane (fixed fee consultant)	External IIPP consultant
Prof. Rainer Kattel 0.4fte	Co-Investigator
Prof. Mariana Mazzucato 0.4fte	Principle Investigator

The Contractor must make commercially reasonable effort to provide these resources at the times requested by the Province.

The Province must provide the Contractor with reasonable notice of engagements and requests for support to enable the Contractor to make the specified resources available.

The Contractor will provide all material and resources necessary to undertake the Services, including IIPP dissemination and communication, indirect costs and consumables.

### **Outcomes**

Through the delivery of the Services the Province wishes to realize the following outcomes and, without limiting the obligation of the Contractor to comply with other provisions of this Part, the Contractor must use commercially reasonable efforts to facilitate the Province achieving them:

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;

The parties acknowledge that the Contractor does not warrant that these outcomes will be achieved.

### **Reporting requirements**

The contractor will engage in weekly phone/video calls with the Contract Manager or designate to report on progress and coordinate activities as described in Schedule A.

The Contractor must provide a draft of the report identified as Deliverable 8 to the Province for review by July 15, 2021. The Contractor must provide a final report identified as Deliverable 4 to the Province for review by September 1, 2021.

The Contractor must provide a draft of the report identified as Deliverable 5 to the Province for review by September 31, 2021. The Contractor must provide a final report identified as Deliverable 5 to the Province for review by October 31, 2021.

### **Subcontractors**

The Contractor may assign any portion of this agreement to a Subcontractor with the express permission of the Province. Such permission is solely at the discretion of the Province.

### **PART 3. RELATED DOCUMENTATION:**

Not applicable

## Schedule B – Fees and Expenses

### **1. MAXIMUM AMOUNT PAYABLE:**

**Maximum Amount:** Despite sections 2 and 3 of this Schedule, \$ 345,785.47 CDN is the maximum amount which the Province is obliged to pay to the Contractor for fees (exclusive of applicable taxes) and expenses under this Agreement.

### **2. FEES:**

**Fees:** For each deliverable described below that is provided by the Contractor as Services during the Term the amount set out below:

(a)	Deliverable No. 1 described as completion of Schedule A, Part 2, service number 3, by July 31, 2021	s.17; s.21
(b)	Deliverable No. 2 described as completion of the remaining Services as described in Schedule A by March 15, 2022	
<hr/> Total Fees		<hr/> \$ 345,785.47 CDN

### **3. EXPENSES:**

#### **Expenses:**

N/A

### **4. STATEMENTS OF ACCOUNT:**

**Statements of Account:** In order to obtain payment of any fees and expenses under this Agreement, the Contractor must deliver to the Province at the end of the Term or, if the Contractor completes the Services before that time, on the completion of the Services, a written statement of account in a form satisfactory to the Province containing:

- (a) the Contractor's legal name and address;
- (b) the date of the statement;
- (c) the Contractor's calculation of all fees claimed under this Agreement, including a declaration that the Services for which the Contractor claims fees have been completed;
- (d) a chronological listing, in reasonable detail, of any expenses claimed by the Contractor with receipts attached, if applicable;
- (e) the Contractor's calculation of all applicable taxes payable by the Province in relation to the Services;
- (f) a description of this Agreement to which the statement relates;
- (g) a statement number for identification; and
- (h) any other billing information reasonably requested by the Province.

### **5. PAYMENTS DUE:**

#### **Payments Due:**

(a) Within 30 days of our receipt of your written statement of account delivered in accordance with this Schedule, we must pay you the fees (plus all applicable taxes) and expenses, claimed in the statement if they are in accordance

with this Schedule. Statements of account or contract invoices offering an early payment discount may be paid by us as required to obtain the discount.

## **Schedule C - Subcontractors**

Not applicable.

**Schedule D – Insurance**

1. The Contractor must, without limiting the Contractor's obligations or liabilities and at the Contractor's own expense, purchase and maintain throughout the Term insurance which the Contractor is required by law to carry, or which the Contractor considers necessary to cover risks in the Contractor's sole discretion.

## **Schedule E – Privacy Protection Schedule**

Not applicable.



#### **Schedule F – Additional Terms**

Not applicable.

## Schedule G – Security Schedule

### Definitions

1. In this Schedule:

- (a) **“Device”** means any device to manage, operate or provide the Services or to connect to any Systems or any Province system or network, or that is capable of storing any Protected Information, and includes any workstation or handheld device the Contractor authorizes Personnel to use in relation to this Agreement;
- (b) **“Facilities”** means the physical locations (excluding those of the Province) the Contractor uses to provide the Services, or to house Systems or records containing Protected Information;
- (c) **“Least Privilege”** means the principle requiring that each subject in a system be granted the most restrictive set of privileges (or lowest clearance) needed for the performance of authorized tasks so as to limit the damage that can result from accident, error or unauthorized use;
- (d) **“Need-to-Know”** means the principle where access is restricted to authorized individuals whose duties require such access and not merely because of status, rank or office;
- (e) **“Personnel”** means all individuals hired or used by the Contractor and Subcontractors to perform the Contractor’s obligations under this Agreement, including unpaid volunteers and the Contractor or a Subcontractor if an individual;
- (f) **“Policies”** means the intentions and directions of an organization or part of it, as expressed in record form by its top management (including, for example, policies, directions, standards, practices, procedures and guidelines);
- (g) **“Protected Information”** means any and all:
  - (i) “personal information” as defined in the Privacy Protection Schedule if attached;
  - (ii) information and records of information the Contractor is required to treat as confidential under this Agreement; and
  - (iii) records, the integrity or availability of which are to be preserved by the Contractor under this Agreement, which in the case of records not falling within (i) or (ii), are marked or instructed by the Province to be so preserved or otherwise treated as “Protected Information” under this Agreement;
- (h) **“Security Event Logs”** means any logs (also known as audit records) of events, notifications or alerts that any component of any Device or other device (not limited to security device), or any Systems or other system or software is technically capable of producing in relation to its status, functions and activities that may be used for such purposes as security investigations, auditing, monitoring and determining security incidents (examples of components capable of producing such logs include firewalls, intrusion prevention systems, routers, switches, content filtering, network traffic flow logs, networks, authentication services, directory services, dynamic host configuration protocols, dynamic naming services, hardware platforms, virtualization platforms, servers, operating systems, web servers, databases, applications, application firewalls);
- (i) **“Systems”** means any systems, subsystems, equipment, infrastructure, networks, management networks, servers, hardware and software the Contractor uses in relation to this Agreement, including for managing, operating or providing the Services, but excluding any the Province owns or makes available to the Contractor for the Contractor to use in relation to this Agreement;
- (j) **“Tenancy”** means those components of the Systems that:

- (i) directly access and store Protected Information,
  - (ii) relate to Protected Information or the Province's tenancy activities, or
  - (iii) are customer facing and managed by the Province in its use of the Services; and
- (k) **"Tenancy Security Event Logs"** means Security Event Logs that relate to Tenancy, including:
- (i) log-on/log-off information about Province user activities, and
  - (ii) application logs, web server log, file server logs, database logs of applications, web servers, file servers or database servers or any other logs that directly store, access or contain Protected Information.

#### **Additional obligations**

2. The Contractor must comply with Appendix G1 if attached.

#### **PERSONNEL**

##### **Confidentiality agreements**

3. The Contractor must not permit any person the Contractor hires or uses to access or obtain any Protected Information unless that person is contractually bound to the Contractor in writing to keep Protected Information confidential on terms no less protective than the terms applicable to the Contractor under this Agreement.

##### **Personnel security screening**

4. The Contractor may only permit individual Personnel to have access to any Protected Information or other asset of the Province (including to any system, network or device the Province makes available to the Contractor) in relation to this Agreement, if, after:
  - (a) verifying their identity and relevant education, professional qualifications and employment history;
  - (b) completing a criminal record check that is updated at least every five years;
  - (c) requiring Personnel to proactively disclose criminal offences to the Contractor unless prohibited by applicable law;
  - (d) performing any additional screening this Agreement or applicable law may require; and
  - (e) performing any additional background checks the Contractor considers appropriate,

the Contractor is satisfied that the individual does not constitute an unreasonable security risk.

5. If any criminal record check or proactive disclosure reveals a prior criminal offence or pending criminal matter, the Contractor must make a reasonable determination of whether the applicable person constitutes an unreasonable security risk, taking into consideration the duties of the individual and the type and sensitivity of information to which the individual may be exposed.
6. If the Contractor is an individual, the Province may subject the Contractor to the screening requirements in this Schedule.

### **Personnel information security training**

7. Unless otherwise specified in this Agreement, the Contractor must ensure all Personnel complete any relevant information security training, at the Contractor's expense, before they provide any Services, or receive or are given access to any Protected Information or any system, device or secure facility of the Province, and thereafter at least annually.

### **Security contact**

8. If not set out elsewhere in this Agreement, the Contractor (but not a Subcontractor) must provide in writing to the Province the contact information for the individual who will coordinate compliance by the Contractor and all Subcontractors and act as a direct contact for the Province on matters relating to this Schedule.

### **Supply chain**

9. The Contractor must ensure that the security requirements of those in its upstream and downstream supply chain are documented, followed, reviewed, and updated on an ongoing basis as applicable to this Agreement.

## **GENERAL POLICIES AND PRACTICES**

### **Information security policy**

10. The Contractor must have an information security Policy that is:
  - (a) based on recognized industry standards; and
  - (b) reviewed and updated at least every three years.

### **Compliance and Standard for Security Controls**

11. Unless this Agreement otherwise specifies, the Contractor must apply controls and security management practices to manage or operate Protected Information and Systems, Devices, and Facilities that are compliant with or equivalent to the following Province's Policies accessible at <https://www2.gov.bc.ca/gov/content/governments/services-for-government/policies-procedures>:
  - (a) "Information Security Policy";
  - (b) government wide IM/IT Standards; and
  - (c) sector or ministry specific IM/IT Standards, if any applicable to the Province ministry, agency or other representative receiving the Services.

### **Contractor security risk assessments**

12. The Contractor must undertake a security threat and risk assessment against an industry security standard before placing any new or materially changed Systems or services into production.

### **Change control and management**

13. The Contractor must:
  - (a) implement and maintain change control processes for Facilities, Systems and Devices in line with applicable security best practices to reduce security-related risks with respect to implemented significant changes; and

- (b) ensure that adequate testing of any change is completed before the change is put into production.

#### **Backups and restores**

- 14. The Contractor must ensure that:
  - (a) it has a backup Policy that is followed and is reviewed, updated and tested at least annually;
  - (b) backups are taken and tested in accordance with the Contractor's backup Policy, but in any event at least annually; and
  - (c) frequency and completeness of backups is based on reasonable industry practice.

#### **Business continuity plan and disaster recovery plan**

- 15. The Contractor must ensure that it has a documented business continuity plan and a disaster recovery plan that is reviewed at least annually.
- 16. The Contractor must ensure that Facilities and Systems are protected from loss, damage or other occurrence, including fire and environmental hazards and power interruptions, that may result in any of those Facilities and Systems being unavailable when required to provide the Services.

#### **Security Incident Response and Management**

- 17. The Contractor must ensure that it has a security incident management Policy and response plan that is reviewed at least annually.

### **PROTECTED INFORMATION AND DATA SECURITY**

#### **Encryption**

- 18. The Contractor must ensure that:
  - (a) encryption of data at rest is implemented and is maintained in effect, uninterrupted, and active at all times, even in the case of equipment or technology failure, for all Protected Information stored on Systems and Devices; and
  - (b) encryption end-to-end is implemented for all Protected Information in transit.

#### **No storage on unencrypted portable media**

- 19. The Contractor must ensure that no Protected Information is stored on portable media for transport outside of the Facilities or Systems without both the prior written approval of the Province and ensuring that the portable media and the Protected Information are encrypted.

#### **Encryption standard**

- 20. For sections 18 and 19, encryption must comply with the Province's "Cryptographic Standards for Information Protection" accessible at <https://www2.gov.bc.ca/gov/content/governments/services-for-government/policies-procedures>.

#### **Isolation controls and logical isolation of data**

- 21. The Contractor must implement and maintain the logical isolation of Protected Information, in effect, uninterrupted, and active at all times, even in the case of equipment or technology failure.

## ACCESS AND AUTHENTICATION

### User Identifiers

22. The Contractor must assign and ensure that user identifiers are unique and personal for log in to Systems and Devices.

### Access

23. The Contractor must implement, follow, and regularly review and update, access control Policies that address, without limitation, onboarding, off-boarding, transition between roles, regular access reviews, limit and control use of administrator privileges and inactivity timeouts for Facilities, Systems and Devices within the Contractor's control.
24. The Contractor must ensure that all access to Protected Information and to Facilities, Systems and Devices is based Least Privilege and Need-to-Know" based on role and responsibilities. The Contractor must identify and segregate conflicting duties and areas of responsibility to reduce incidents of fraud and other abuse.
25. The Contractor must verify an individual's identity before assigning the individual a unique identifier that would give them access to Facilities, Systems or Devices.
26. The Contractor must implement a formal user registration process for Personnel that includes:
  - (a) verification of access levels;
  - (b) creating and maintaining records of access privileges;
  - (c) audit processes; and
  - (d) actions to ensure access is not given before approval is granted by the Contractor.
27. The Contractor must maintain a current and accurate inventory of computer accounts and review the inventory on a regular basis to identify dormant, fictitious or unused accounts.
28. The Contractor must implement a monitoring process to oversee, manage and review Personnel access rights and roles at regular intervals.
29. The Contractor must ensure that all Systems and Devices:
  - (a) are configured in alignment with industry standards;
  - (b) enforce a limit of consecutive invalid logon attempts by a user during a predetermined time period;
  - (c) automatically lock the applicable account and Systems after failed logon failures;
  - (d) limit the number of concurrent sessions;
  - (e) prevent further access to Systems by initiating a session lock; and
  - (f) provide the capability of disconnecting or disabling remote access to the Systems.

## **Authentication**

30. The Contractor must use or require complex passwords or personal identification numbers (PINs) that are not shared, default or blank and that are encrypted (not displayed) when entered, biometric accesses, keys, smart cards, other logical or access controls, or combinations of them, to control access to Protected Information and to Systems and Devices.
31. The Contractor must ensure that Systems for password-based authentication:
  - (a) enforce minimum password complexity, including requiring passwords to be case sensitive, contain a minimum of eight characters and a combination of upper-case letters, lower-case letters, numbers, and/or special characters;
  - (b) change authentication passwords regularly at predetermined intervals, but at a minimum semi-annually;
  - (c) store and transmit only encrypted representations of passwords;
  - (d) enforce password minimum and maximum lifetime restrictions;
  - (e) prohibit password reuse;
  - (f) prevent reuse of identifiers; and
  - (g) disable the identifier after ninety days of inactivity.

## **Highly sensitive Protected Information**

32. If this Agreement or the Province under this Agreement indicates that any Protected Information is highly sensitive, the Contractor must also ensure that Systems enforce with respect to that Protected Information:
  - (a) two-factor authentication for access;
  - (b) enhanced logging that logs all accesses;
  - (c) request based access; and
  - (d) no standing access rights.

## **SECURITY EVENT LOGS**

### **Log generation, log retention and monitoring**

33. The Contractor must ensure that logging of Security Event Logs is enabled on all applicable Systems components
34. The Contractor must retain Security Event Logs for the Systems online for a minimum of 90 days and either online or off-line for an additional period of time adequate to enable the Contractor to conduct effective security investigations into suspected or actual security incidents.
35. The Contractor must retain Tenancy Security Event Logs online for a minimum of 90 days and either:
  - (a) such additional period of time as the Province may instruct; or
  - (b) ensure that the Tenancy offers the technical capability for the Province to retain the Tenancy Security Event Logs,

to enable the Province to comply with an information schedule approved under the *Information Management Act* or other retention period required by law.

36. Upon the Province's request, the Contractor must ensure that the Tenancy offers the technical capability for the Province to enable or configure the forwarding, extraction, backup of Tenancy Security Event Logs from the Tenancy to the Province's security information and event management system or to an external log storage and retention system.
37. The Contractor must review Security Event Logs regularly to detect potential security incidents, using automated tools or equivalent processes for the monitoring, review, correlating and alerting of Security Event Logs.

## **PROVINCE PROPERTY**

### **Access to Province facilities, systems or networks**

38. If the Province makes available any facilities, systems, networks or devices for use of the Contractor in relation to this Agreement, the Contractor must comply with, and permit access on its behalf only by those authorized Personnel who have been instructed to comply with, the Province's Policies then applicable to their acceptable use, access and protection accessible at <https://www2.gov.bc.ca/gov/content/governments/services-for-government/policies-procedures>, including:
  - (a) "Appropriate Use Policy" (as also referenced in chapter 12 of the Province's "Core Policy and Procedures Manual");
  - (b) "Information Security Policy";
  - (c) government wide IM/IT Standards; and
  - (d) sector or ministry specific IM/IT Standards, if any applicable to the Province ministry, agency or other representative receiving the Services.
39. The Province has the rights to:
  - (a) not make any particular Province facility, system, network or device available before the Contractor or individual Personnel or both agree to a form of agreement acceptable to the Province on acceptable use, protection of, and access to, such facility, system, network or device, or at all;
  - (b) not permit connection to any particular Province system or network until satisfied with the controls applied and the security status of the Device to be connected;
  - (c) keep facilities access logs and Security Event Logs, and to otherwise monitor and analyze use of Province facilities, systems and networks to verify compliance, investigate suspected or actual breaches or information incidents and protect the Province's assets, including records, in compliance with applicable laws, including the *Freedom of Information and Protection of Privacy Act* and *Information Management Act*, and the Province's Policies; and
  - (d) limit or revoke access to any Province systems, facility or device at its discretion.

### **Application development**

40. If the Services include software development, the Contractor must ensure that the applications and programming interfaces are developed according to industry standards and Province's Policies applicable to application development standards. The Contractor must use secure application development practices for the development of the software.



## **FACILITIES, SYSTEMS, DATABASE AND DEVICE SECURITY**

### **Physical security**

41. The Contractor must ensure that adequate physical controls and processes are implemented to ensure that only authorized persons have physical access to the Facilities and Systems.
42. The Contractor must develop, document, and disseminate a physical and environmental protection Policy that it reviews at least annually.
43. The Contractor must review physical access logs at least once monthly.
44. The Contractor must ensure that physical security of any Systems or Facilities being used or capable of being used to house Protected Information meets a standard as would be reasonably expected to provide adequate protection based on the value of the data being protected and the environment in which the Systems or Facilities are located. At a minimum, this should include:
  - (a) hardening of the perimeter of the Facilities;
  - (b) physical separation of public and restricted spaces;
  - (c) Intrusion Alarm System (IAS) partitioned to ensure areas containing Protected Information are protected at all times;
  - (d) Access Control Systems (ACS) and/or Key Management processes; and
  - (e) visitor and identity management processes – including access logs and identification badges.

### **Separation of production from test environments**

45. The Contractor must not use any production data in any development, test or training environments used for the Services without the Province's prior written consent. If the Province gives such consent, the production data must, at minimum, be obfuscated (for example, by using data masking functionality).
46. The Contractor must keep its development, test and training environments separate from its production environments used for the Services at all times, even in case of failure.

### **Systems (including servers) hardening**

47. The Contractor must:
  - (a) harden all Systems against attack and misuse, using appropriate security best practices for the hardening of the specific deployed platform, before placing those Systems into production;
  - (b) ensure that all unsecured and unneeded ports, services, applications, protocols and network communicating applications are uninstalled or disabled on all Systems;
  - (c) applying Least Privilege, ensure that the Contractor only configures and makes operational ports, services, applications, protocols and network communicating applications based on the functional requirements of the respective Systems;
  - (d) ensure that default passwords and shared accounts are not used for any Systems; and

- (e) in relation to Systems, implement server hardening using configuration security best practices (for example, Center for Internet Security, Inc. (CIS) Benchmarks or equivalent) for any server operating systems, server virtualization, server middleware (for example, web servers and database servers) and application servers.

#### **Perimeter controls (firewall and intrusion prevention system) and network security**

48. The Contractor must:

- (a) implement stateful packet inspection firewalls to control traffic flow to and from Systems and Tenancy at all times, and configure the stateful packet inspection firewalls applying security best practices and Least Privilege;
- (b) implement an intrusion prevention System to control and filter traffic flow leaving and entering Systems and Tenancy at all times, and configure the intrusion prevention System applying security best practices; and
- (c) implement a secure network perimeter and network segmentation for Systems, with ingress and egress points that are known and controlled.

#### **Application firewall**

49. The Contractor must implement application layer firewalls on Systems:

- (a) at such level of protection as the Province may instruct ; and
- (b) to detect and mitigate application attacks (for example, brute force, OWASP Top 10, SQL injection, cross site scripting).

#### **Management network**

50. The Contractor must ensure that for any Systems:

- (a) the management network remains logically separated from any other zone and is not directly accessible from the Internet;
- (b) the management network is internally segmented, with each server's dedicated network interface on its own segmented network and that interfaces on the management network do not have visibility to each other; and
- (c) all access to the management network is strictly controlled and exclusively enforced through a secure access gateway, bastion host or equivalent.

#### **Remote management and secure access gateway**

51. The Contractor must perform any remote management of Systems or Devices in a secure manner, using encrypted communication channels and adequate access controls.

#### **Database security**

52. The Contractor must ensure that for any Systems:

- (a) database maintenance utilities that bypass controls are restricted and monitored;
- (b) there is a formal approval process in place for handling requests for disclosure of database contents or for database access, including steps to evaluate privacy impacts and security risks of such requests; and

- (c) methods to check and maintain the integrity of the data are implemented (for example, consistency checks and checksums).

53. For database security, the Contractor must implement logical isolation and encryption of Protected Information.

#### **Device security and antivirus scanning**

54. The Contractor must ensure all Devices:

- (a) have antivirus and malware protection as appropriate for the particular Device active at all times;
- (b) are configured to perform antivirus scans at least once per week;
- (c) have host based firewall configured, enabled and active at all times; and
- (d) have all patches and appropriate security updates installed for the operating system and all installed software.

### **VULNERABILITY PREVENTION, SCANNING AND MANAGEMENT**

#### **Proactive management**

55. The Contractor must:

- (a) obtain information in a timely basis about technical vulnerabilities relating to Systems and Devices; and
- (b) implement processes to stay current with security threats.

#### **Patching**

- 56. The Contractor must patch all Systems regularly in line with security best practices and ensure that current software, operating systems and application patching levels are maintained.
- 57. The Contractor must ensure that all Systems have all patches installed on a regular schedule, within the time frame recommended by the manufacturer unless the Province otherwise consents in writing.
- 58. The Contractor must ensure that vulnerabilities are remedied and patches installed on an accelerated basis for zero-day, critical and high vulnerabilities. For zero-day vulnerabilities, the Contractor must implement appropriate mitigation measures promptly on notification of the zero-day vulnerability. The Contractor must remediate zero-day, high and critical vulnerabilities through patching, decommission, or compensating controls.
- 59. The Contractor must patch high vulnerabilities within 30 days or less of discovery and patch medium vulnerabilities within 90 days or less of discovery.

#### **Vulnerability Scanning**

60. The Contractor must ensure that a vulnerability scan is completed on components of all Systems:

- (a) with any identified vulnerabilities remedied, before being placed into production; and
- (b) on a regular schedule, set at a minimum of one scan per quarter, unless the Province otherwise consents in writing.

### **Web application vulnerability scanning**

61. The Contractor must ensure that a vulnerability scan is completed on any web applications used for Tenancy or in any other Systems:
  - (a) and on any major changes to such web applications, with any identified vulnerabilities remedied, before being placed into production; and
  - (b) on a regular schedule, set at a minimum of one scan per quarter, unless the Province otherwise consents in writing.

### **Antivirus and malware scanning**

62. The Contractor must ensure that all Systems servers:
  - (a) have antivirus and malware protection configured, active and enabled at all times;
  - (b) have antivirus and malware definitions updated at least once a day; and
  - (c) are configured to undergo a full anti-virus scan for latent infections (to detect infections missed by the real-time agent) at least once a week.

## **DISPOSALS**

### **Asset disposal**

63. The Contractor must ensure that all disposals of assets used in providing or relating to the Services are done in a secure manner that ensures that Protected Information cannot be recovered.

### **Asset management**

64. The Contractor must have asset management and disposal Policies that are followed, and reviewed and updated regularly in line with security best practices, and that address hardware, software and other critical business assets.
65. The Contractor must keep an asset management inventory that includes the name of the System, location, purpose, owner, and criticality, with assets added to inventory on commission and removed on decommission.

### **Information destruction and disposal**

66. Unless this Agreement otherwise specifies, the Contractor must retain all records containing Protected Information in the Contractor's possession until instructed by the Province in writing to dispose or deliver them as instructed.
67. The Contractor must securely erase:
  - (a) records that contain Protected Information and Tenancy Security Event Logs when instructed in writing by the Province; and
  - (b) any backup, transitory and extra copies of records that contain Protected Information or Tenancy Security Event Logs when no longer needed in relation to this Agreement.

68. The Contractor must ensure that Protected Information and Tenancy Security Event Logs on magnetic media are securely wiped by overwriting using procedures and adequate media wiping solutions, degaussing, or other method in line with security best practices for disposal of media.

## **NOTICES, INCIDENTS AND INVESTIGATIONS**

### **Notice of demands for disclosure**

69. In addition to any obligation the Contractor may have to notify or assist the Province under applicable law or this Agreement, including the Privacy Protection Schedule if attached, if the Contractor is required (including under an enactment or a subpoena, warrant, order, demand or other request from a court, government agency or other legal authority) to produce, provide access to or otherwise disclose any Protected Information, the Contractor must, unless prohibited by applicable law, immediately notify and provide reasonable assistance to the Province so the Province may seek a protective order or other remedy to prevent or limit the disclosure.

### **E-discovery and legal holds**

70. The Contractor must fully co-operate with the Province to enable the Province to comply with e-discovery and legal hold obligations.

### **Incidents**

71. In addition to any obligation the Contractor may have under applicable law, including the *Freedom of Information and Protection of Privacy Act*, or this Agreement, if, during or after the Term, the Contractor discovers a suspected or actual unwanted or unexpected event or series of events that threaten the privacy or security of Protected Information (including its unauthorized access, collection, use, disclosure, alteration, storage or disposal) or Tenancy, whether accidental or deliberate, the Contractor must:
- (a) immediately report the particulars of such incident to, and follow the instructions of, the Province, confirming any oral report with a notice in writing to the Province as soon as reasonably practicable (if unable to contact the Province's contract manager or other designated contact for this Agreement, the Contractor must follow the procedure for reporting and managing information incidents on the Province's website at <https://www2.gov.bc.ca/gov/content/governments/services-for-government/information-management-technology/information-security/information-incidents>; and
  - (b) make every reasonable effort to recover the records containing Protected Information and contain and remediate such incident, following such reasonable instructions as the Province may give.

### **Investigations support and security investigations**

72. The Contractor must:
- (a) conduct security investigations in the case of incidents (including any security breach or compromise) affecting Devices, Facilities, Systems, Tenancy or Protected Information, collecting evidence, undertaking forensic activities and taking such other actions as needed;
  - (b) provide the Province with any related investigation reports, which the Contractor may sanitize first;
  - (c) upon the Province's request, provide the Province with any logs relating to such investigation reports as validation/confirmation of such investigation, which the Contractor may sanitize first; and
  - (d) maintain a chain of custody in all such security investigations it undertakes.
73. Upon the Province's request, the Contractor must:

- (a) provide investigative support to the Province to enable the Province to conduct its own security investigations into incidents (including security breaches or compromises) affecting the Tenancy or Protected Information;
  - (b) provide the Province with timely access via an on-line, real-time GUI (Graphic User Interface) facility to any Tenancy Security Event Logs and to other Security Event Logs for Systems (the latter of which the Contractor may sanitize first to mask or remove, for example, data pertaining to the Contractor's customers) to assist the Province in conducting the Province's security investigations, or in case of technical limitations, other method acceptable to the Province (for example, on-site visits to enable direct access to those Security Event Logs).
74. The Contractor must work with and support the Province if the Province needs assistance in legal proceedings in relation to security investigations related to Protected Information or Tenancy.

#### **Province Security Threat and Risk Assessment ("STRA") support**

75. The Contractor must, via its technical and security resources, support the Province in completing a STRA for the Services and to otherwise assess the risks associated with the Services, including by providing all information and documentation (for example, architecture diagrams, service architecture, controls architecture and technical information), which the Contractor may sanitize first and that the Province may reasonably require for such purpose.

#### **Notification of changes**

76. The Contractor must notify the Province of any changes to its security Policies, management practices and security controls described in this Agreement that may potentially negatively impact the security of Tenancy, Protected Information, or those Systems providing the Services.

#### **Compliance verification**

77. Upon the Province's request, the Contractor must provide, at no additional cost, the following security reports to the Province at least every six months during the Term:
- (a) vulnerability scan reports of those Systems providing the Services; and
  - (b) patch status reports for those Systems providing the Services.
78. In addition to any other rights of inspection the Province may have under this Agreement or under statute, the Province has the rights, at any reasonable time and on reasonable notice to the Contractor, to:
- (a) request the Contractor to verify compliance with this Schedule and to keep security controls documentation or records to support compliance; and
  - (b) enter on the Contractor premises and Facilities to inspect and to validate the Contractor's compliance with the security obligations under this Agreement
79. The Contractor must permit, and provide reasonable assistance to, the exercise by the Province of the Province's rights under this section. If any non-compliance or deficiency is found, the Province may (in addition to any other rights it may have) require the Contractor, at the Contractor's expense, to develop and implement a corrective action plan within a reasonable time.

#### **Notice of non-compliance**

80. If for any reason the Contractor does not comply, or anticipates that it will be unable to comply, with a provision in this Schedule in any respect, the Contractor must promptly notify the Province of the particulars of the non-compliance or anticipated non-compliance and what steps it proposes to take to address, or prevent recurrence of, the non-compliance or anticipated non-compliance.

## **MISCELLANEOUS**

### **Interpretation**

81. In this Schedule, unless otherwise specified, references to sections by number are to sections of this Schedule.
82. Any reference to the "Contractor" in this Schedule includes any subcontractor or agent retained by the Contractor to perform obligations under this Agreement and the Contractor must ensure that any such subcontractors and agents comply with this Schedule.
83. Any reference to a specified Policy refers to it as may be revised or replaced from time to time.
84. If a provision of this Schedule conflicts with a documented process required by this Schedule to be created or maintained by the Contractor, the provision of the Schedule will prevail to the extent of the conflict.

### **Referenced documents**

85. Policies and other documents of the Province referenced in this Schedule may be updated or replaced by the Province from time to time without notice, and if not found at the hyperlink or URL provided or via the Province's main website at <http://www.gov.bc.ca>, be obtained from the Province's contact for this Agreement.

### **Survival**

86. Sections 63, 66, 67, 68, 69, 70, and 71 and other obligations of the Contractor in this Schedule which, by their terms or nature, are intended to survive the completion of the Services or the termination of this Agreement, will continue in force indefinitely subject to any applicable limitation period prescribed by law, even after this Agreement ends.

**Schedule G – Appendix G1 – Additional Security Obligations**

Not applicable.



## Schedule H – Tax Verification Schedule

1. In this Schedule:
  - a) **“Tax Verification Letter”** means a letter issued by the Province of British Columbia’s Ministry of Finance verifying that the Contractor meets its applicable B.C. corporate income tax filing obligations and provincial sales tax (PST) filing and payment obligations; and
  - b) **“Valid”** means that the Tax Verification Letter’s period of validity, as indicated on the Tax Verification Letter, has not ended.
2. As a condition of entering into this Agreement, the Contractor provided to the Province a Valid Tax Verification Letter.
3. Upon request by the Province, the Contractor must provide the Province with a new Valid Tax Verification Letter. Notwithstanding any other provision of this Agreement, the Contractor acknowledges and agrees that any extension or renewal of this Agreement is conditional upon the Province having, or receiving from the Contractor in response to a request from the Province, a Valid Tax Verification Letter prior to any such extension or renewal.