

2. ADMINISTRATIVE INFORMATION

2.1 Schedule of RFP events

The following are schedules of events for this RFP and the subsequent project. Dates for milestones after the closing date are provided as estimates only. Best efforts will be made to meet these dates. However, business needs may change timelines. Where dates change, reasonable notice of those changes will be provided to vendors.

Table 1: Schedule of RFP events

Last Day for Receipt of Questions:	21 March 2022, 23:59 PST
RFP Closing Date and Time:	March 28 2022, 23:59 PST
Tentative Interview/Presentation (if required):	March 30 th - April 1st 2022
Tentative Supplier Selection and Negotiation:	April 4 th -8th 2022
Project Kick-Off	April 18 th , 2022

2.2 Proposal response format

Your proposal must be prepared and submitted in two (2) separate packages:

Part 1 – Technical Submission (1 copy) (with no reference to price)

This package should meet the proposal requirements described in the section ‘Proposal Structure and Evaluation’.

Part 2 – Financial Submission (1 copy)

This section is to include a cost estimate for the completion of Phase A of the two-phase proposed project, as described in the technical submission.

2.3 Proposal submission

To be eligible for consideration, LMIC must receive the proposal, signed by a legal representative and stamped with the official company seal on or before March 28, 2022, 23:59 Pacific Standard Time at the following address: info@lmic-cimt.ca with the subject line: “**LMI Tool Development RFP – {Supplier name}**”.

Proposals must be submitted in two separate attachments clearly identified in one e-mail as follows:

- Technical Proposal

- Financial Proposal

Proposals received after the deadline specified above will not be considered. LMIC reserves the right to extend the deadline for the submission of proposals.

Vendors who fail to raise issues and questions they may have during the RFP period do so at their own risk. Vendors must recognize that certain proprietary information may not be released to anyone other than the successful supplier(s) for security reasons. LMIC assumes no responsibility or liability arising from information obtained in a means other than those prescribed in this RFP.

2.4 Inquiries

Inquiries related to this Request for Proposal are to be directed, no later than **March 21th, 2022** as indicated above, to:

Name Bruno Scheibler

Email bruno.scheibler@lmic-cimt.ca.

Organization Labour Market Information Council

3. STATEMENT OF WORK

To navigate the changing world of work, Canadians require better and easier access to meaningful labour market information (LMI). An enormous amount of Canadian LMI exists, but it is currently spread across multiple sources, often available only in formats that experts can make use of. Other information potentially derived from job postings and other types of streaming data, is ‘hidden in plain sight.’

To address this systemic challenge, LMIC and the [Future Skills Centre \(FSC\)](#) have launched a [cloud-based data repository \(Data Hub\)](#) that consolidates and curates high-quality LMI data available in Canada.

The [LMIC Data Hub](#) is a Google Cloud Platform-based data lake in which information is stored to make it easy to access. However, the Hub is only a *back-end* for tools, apps, and services which deliver LMI to users. Users will obtain data through *front-end* tools and user interfaces like websites, apps and dashboards that draw on Data Hub data through its API.

To make the data in the Data Hub accessible to Canadians, LMIC will partner with CSOs to develop front-end tools (like apps and web-based services) that use data from the Data Hub.

However, CSOs are subject matter experts and not equipped to develop digital tools without additional support.

To implement these tools, LMIC wishes to partner with a software development company, who will work both with LMIC and up to four pre-identified CSOs to develop or enhance digital labour market tools that draw upon the data made available by the LMIC Data Hub. These digital tools could be apps, websites, dashboards – or something else entirely.

We anticipate building up to four products (web applications or other digital tools) that connect to the Data Hub via API. If applicable, other data or sources of information deemed a business requirement for the front-end tool could also be integrated into the project. We are also interested in piloting the use of data/information that is not available from traditional sources.

There are two main phases to this project. In Phase A, the software developer will work with LMIC and each of the selected CSOs to determine requirements for the labour market digital tools and design the tools. In Phase B, the tools will be developed.

3.1 Project scope, tasks and phases

3.1.1 Project scope

Up to four CSO partners will be selected to participate in this project, leading to the development of two to four front-end tools, all drawing on LMIC's Data Hub.

Phase A Scope:

- Guide and support CSOs and LMIC to collaboratively identify needs, gather requirements and develop use cases
- Develop and lead workshops with LMIC and CSOs to co-design the tools to be developed in Phase B
- Collaborate with LMIC and CSOs to develop detailed Project Implementation Plans for each tool
- Design tool concepts
- Develop an estimated Phase B budget and timeline

These steps will be carried out simultaneously for each of the two to four pilot project applications.

Phase B Scope:

- Detailed design
- Development
- Implementation
- Testing and evaluation

The financial submission for this RFP should only encompass Phase A activities.

3.1.2 Project tasks

Due to the breadth of the project, LMIC requires a technical partner with a substantial diversity of capabilities, encompassing every stage of a digital development project. Please demonstrate your capacities and experience in the following:

- **User-centered design/design thinking sessions:** supporting the refinement of preliminary high-level ideas and information requirements into use cases.
- **Budget, timeline, and implementation plan development:** collaboratively develop detailed budgets and timelines for the creation and implementation of the digital tools, based on the outcomes of the discovery process.
- **UI/UX research, design, and validation** that incorporates user feedback and co-design principles.
- **Information design:** in the context of this initiative, an important competency will be the ability to critically approach presenting complex labour market information and data in a way that fosters effective and efficient understanding of that information.
- **Full implementation and post-implementation support for digital tools.** Including but not limited to:
 - Connections to the LMIC API for data retrieval
 - Queries to the LMIC API based on end-user input
 - Data manipulation and aggregation components
 - Data visualizations and other data-driven outputs
 - The front-end user interface

3.1.3 Key types of experience relevant to this project:

In Phase A and Phase B, it is likely that the successful partner will need to complete the following types of activities, tasks, and take on a variety of roles, including:

- Technical project management
- Experience carrying out user research and UX/UI design processes
- Experience working with complex data and presenting this to users in an intuitive and accessible fashion
- Bilingual development and data management: LMI tools will be bilingual, and work with bilingual data
- Technical advice to the CSOs as they build their tools training, rollout and adoption plans (leading to the creation of a detailed project implementation plan (PIP))
- User experience research expertise and guidance
- Tool design
- Use of design thinking to carry out user experience research and collaboration sessions
- Coaching co-design partners to complete user experience research and needs assessment activities
- Leading visioning exercises
- Defining user experience based on research and collaboration
- Designing, developing, and validating the digital tool
- Prototyping and testing
- Technical development

- Technical implementation of digital tool
- Accessibility and inclusion: Some organizations may be situated in low bandwidth areas, so experience developing digital tools using approaches and platforms that operate affectively in low bandwidth contexts is important.

3.1.4 Project phases

The following table is an estimated sequencing of project phases. Assigning specific dates and adapting sequencing will occur in the project implementation planning (PIP) phase in collaboration with all project partners.

Note that the Phase A activities need to be completed for up to four separate tools, each in partnership with a different Career Service Organization.

	Phase A			Phase B		
	Months 1-3	Months 4-5	Months 6-7	Months 5-6	Months 7-8	Months 7-9
Career service provider partner selection	█					
Technical partner selection	█					
Project implementation planning (PIP)	█					
Co-design kick off	█					
Document organizational needs and use cases	█	█				
Digital solution concept development		█	█			
Budget and timeline development		█	█			
User experience design				█	█	
Prototype and test				█	█	█
Implement digital tool						█
Build capacity						█
Evaluate impact						█

3.1.5 Project deliverables and services

In addition to carrying out the tasks described above, the specific project deliverables include the following:

Phase A:

- Research and design plan, inclusive of all workshops and discovery activities
- Project Implementation Plan (PIP)
- User experience research workshops/sessions/activities
- Wireframes and use case descriptions for two to four digital tools that draw on the LMIC Data Hub
- Phase B estimated budget and timeline

Phase B (out of scope for this RFP but provided for information purposes as next steps):

- Up to four digital tools drawing on the LMIC Data Hub via the API described in the appendices to this document
- Tool implementation plan and rollout support
- Documentation for each of the pilot web applications
- User testing data and application performance data that can be used to inform future iterations of the MVP and development of future applications

3.1.6 Project structure and client support

Both Phases A and B of the project will use a co-design inspired process to integrate all three partners involved in the project: LMIC, the CSOs and you – the selected technical partner.

For reference, co-design is a process that is creative and participatory: it brings people who have subject matter expertise and lived experience together with technical developers, designers, and implementers to create solutions.

In the context of this initiative, co-design means:

1. Bringing together the LMI subject matter expertise of LMIC with career development professionals from the selected CSOs
2. Collaborating with a technical development partner to create a vision for a digital tool that will bridge the gap between LMI and the needs of career professionals
3. Developing and implementing a digital tool
4. Building the capacity of career development professionals to use and benefit from the tool
5. Evaluating the results of our work together

3.1.7 What each of our organizations will contribute and do during this initiative

The following is an example of how our collaboration may be structured. We will work with you and the CSOs to refine this plan early in the project, as part of the Project Implementation Plan.

Organization	Contributes	Activities
LMIC	<ul style="list-style-type: none"> • Project management and project governance • Subject matter expertise on LMI • Access to the LMIC Data Hub • Capacity building for career development professionals on the digital tools we develop together 	<ul style="list-style-type: none"> • Selection of partners • Coordinating timelines and collaborations • Development of detailed Project Implementation Plan (PIP) with all participating organizations • Participating in all co-design sessions and activities • Participating in development of a 5-year sustainability

	<ul style="list-style-type: none"> • Funding to partner organization to ensure full participation in activities • Funding to technical partner 	<ul style="list-style-type: none"> • plan with career service organizations • Evaluating and reporting on results
<p>Career service organization (CSO)</p>	<ul style="list-style-type: none"> • One lead point of contact within your organization to coordinate your participation and contributions • Subject matter expertise on the needs of career development professionals • Subject matter expertise on the needs of clients and end-users • User experience research • Commitment to implementation of tool within organization • If proposing to iterate/build on an existing digital LMI tool: full access to the tool, its source code and back-end 	<ul style="list-style-type: none"> • Coordination of timelines and collaborations • Participating in all co-design sessions and activities • Researching the needs of career development professionals • Delivering capacity development to career development professionals • Developing an implementation plan for the digital tool within your organization • Ensuring use and uptake of the digital tool in your organization • Supporting evaluation
<p>Technical development partner</p>	<ul style="list-style-type: none"> • Project management • Project implementation plan (PIP) • User experience research expertise and guidance • Tool wireframes • Phase B detailed plan • Phase B budget <p>In Phase B (out of scope for this RFP):</p> <ul style="list-style-type: none"> • Tool design • Technical development • Technical implementation 	<ul style="list-style-type: none"> • Participate in Kick-Off and Discovery Session(s) with between 2 and 4 CSOs • Leads development of detailed Project Implementation Plan (PIP) with all participating organizations • Designs user experience research and collaboration sessions, encompassing the range and variety of Hub capabilities • Coach co-design partners to complete user experience research and needs/innovation assessment activities • Leads visioning exercises and creates wireframes • Update detailed Project Implementation Plan (PIP) to include next phase, with

		<p>all participating organizations</p> <p>In Phase B (Out of Scope for this RFP):</p> <ul style="list-style-type: none"> • Designs, develops, and validates the digital tool • Prototyping and testing • Implements digital tool
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3.2 Estimated value

Responses to this RFP are to be fully costed.

It is estimated that the budget for Phase A will be between \$30k and \$60k CAD per tool.

There will be a minimum of two (2) tools and a maximum of four (4) tools included in the discovery phase of work (Phase A).

Proposals will not be disqualified if they are above or below this budget range.

3.3 Technical environment and requirements

The LMIC Data Hub is implemented on the Google Cloud Platform. The data within the Data Hub is accessible via a REST API (OpenAPI specification). For further information on data and the API, please see the appendices to this document.

LMIC is agnostic with respect to the platforms and tools used to implement the digital tools. However, as noted above:

- Some organizations may be situated in low bandwidth areas, so experience developing digital tools using approaches and platforms that operate affectively in low bandwidth contexts is important
- Applications will need to be bilingual, and work with bilingual data
- Digital tools will be implemented and hosted on the IT infrastructure of the chosen CSOs. Consequently, additional technical requirements will be provided during the first phase of the project
- Digital tools must behave appropriately with respect to how they access the LMIC Data Hub API, and must not pose a security or performance risk for the LMIC Data Hub

3.4 Approach and methodology

The contractor is expected to take a flexible and iterative approach during the project. In particular, although the contractor is not expected to take a fully Agile approach, and LMIC itself is not a fully Agile organization, LMIC recognizes that software development projects benefit from flexibility with respect to project direction and deliverables. As a result, the contractor is expected to be an active participant with LMIC during the project, and to espouse the following agile-based principles:

- Individuals and interactions over processes and tools
- Working software over excessive project documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

3.5 Managerial requirements

As indicated by the list of project tasks and the co-design approach described in Section 3.3, this project requires the software development company to actively participate in the management aspects of the pilot project. In particular, the chosen company will need to take a leadership role in guiding both LMIC and the CSOs through the research and design phases of the project. Ideally the chosen company will also have experience in working in a highly collaborative project environment.

4. PROPOSAL STRUCTURE AND EVALUATION

The proposal should contain a **technical submission** and a **financial submission**. Details of what each of these submissions should contain are provided below.

Each proposal will be evaluated solely on its content. In submitting a proposal, the supplier agrees that the decision of LMIC will be final. Vendors acknowledge and understand that LMIC is not obligated to seek clarifications concerning proposals. Decisions to request clarifications or to conduct, if needed, interviews/presentations are at the sole discretion of LMIC.

4.1 Technical submission

The **technical submission** of the proposal should include two main elements:

- **Element 1:** A description of how Phase A will be accomplished.
- **Element 2:** A description of how the previous experiences of your company relate to the proposed work in both Phase A and Phase B.

These two elements may be intermixed in the proposal, but each should be clearly identifiable in order to facilitate evaluation of the proposal.

4.1.1 How Phase A will be accomplished

Element 1 of the Technical Submission – *how Phase A will be accomplished* – should include descriptions of:

- Your proposed approach to the items outlined under Project Tasks, specifically, as well as the Statement of Work
- A high-level work plan that describes the expected development stages (and/or strategy) and approximate expected timeline for Phase A of the project.
- Your capacity to work with up to four project teams developing four tools with working prototypes within 6 months and launched within 9 months
- Resumes of proposed team members for this initiative, **for both Phases A and B**, showing technique and technology skill sets and experience, and assurance of availability
- Project governance/issue resolution roles and responsibilities that would apply to this initiative
- Project risk management approach
- Ability to meet legal/insurance/contract requirement
- Confirmation of availability for LMIC initiative start
- Ability to work (e.g., hold discovery sessions) in French and English (a significant asset, but not required).

4.1.2 Relevant company experience

Element 2 of the Technical Submission – *relevant company experience* – should include descriptions of and, where relevant, supporting documentation for:

- Your approach to user experience research
- A description of the technology or technologies you plan to use for implementation of the pilot LMI digital tools (i.e. possible ‘stacks’. If there are multiple options, discuss how you would determine which option to use as the project develops).
- How the chosen technologies will appropriately interface with the LMIC REST API (OpenAPI specification). For further information on data and the API, please see Appendices C and E.
- The company level of expertise and/or experience in previous relevant projects, and how that experience and/or expertise will inform this project, including description of specific products or services you have experience with implementing that match LMIC technical and managerial requirements
- Your methodology and approach for working with clients on similar projects, and which elements of the current project are outside of your scope and would require you to work with other companies
- Your preferred solution build platform and implementation approach/methodology
- Any project management platforms you intend to use during the project
- Project team member roles and responsibilities that would apply to this initiative
- Description of all products and services offered or subcontracted from third parties
- Sample projects with similarities to this initiative

- Proof of successful Agile implementations
- Example project Gantt chart/schedule
- Example project build organization structure chart
- Three project references

Note that identifying out-of-scope elements will not automatically disqualify you from participating in the project.

4.2 Financial submission

Only a budget proposal for **Phase A** is required to complete the requirements of this RFP.

Note that during Phase A, work will go into generating a separate second budget and timeline for Phase B, both for the CSOs and the technical partner.

Please note that LMIC reserves the right to terminate the project at the end of Phase A. LMIC also reserves the right to issue a new RFP for Phase B.

As noted, Phase A of the project will involve between two and four digital tools. The specific tools will be selected from a pool of applications from CSOs prior to the start of Phase A.

The selection of tools by LMIC will be made taking into account the scope of the overall project to ensure that the total number of tools can be accommodated by the available budget and timeline.

Keeping this in mind, we are requesting that you provide a financial submission for four tools.

During contract negotiation, LMIC will indicate the actual number of tools (from two to four) that are in Part A project scope. Before contract finalization there will be an opportunity to revise the budget based on the actual number of tools.

The **financial submission** should clearly describe, at a granular level of detail, which elements and features the pricing for the project encompasses, as well as cost estimates or ranges for these elements. It may also be broken down by project stages.

It may also include rates/pricing structure for other products/services/capabilities you think are relevant in the delivery of this initiative that you can contribute.

5. LEGAL AGREEMENTS

5.1 Contractual Agreement

LMIC will negotiate a contractual agreement with the preferred vendor. If LMIC is unable to negotiate an acceptable contractual agreement with the preferred vendor, then the second preferred vendor may be selected, and a formal written contractual agreement will be

developed. In any case, LMIC, at any time and without liability, may withdraw from negotiations with any potential vendor.

5.2 Conflict of Interest

Vendors are to fully disclose, in writing, any circumstances of actual or potential conflicts of interest, as well as that which could be perceived as conflicts of interest, to LMIC on or before the closing date of the RFP. LMIC will review all disclosures made by vendors under this provision and take such steps as it, in its sole discretion, deems necessary to address potential conflicts, including but not limited to requiring the supplier to address and remedy the conflict of interest to the satisfaction of LMIC, or otherwise disqualifying the supplier from further participation.

5.3 Terms and Conditions

1. LMIC will not be responsible for any costs incurred by a supplier in preparing and submitting proposals and/or attending interviews/presentations. LMIC accepts no liability of any kind to a supplier unless, and until, its proposal is accepted and a formal agreement is negotiated.
2. Submission of a proposal shall not obligate, nor should it be construed as obligating LMIC to accept any such proposal or to proceed further with the project. LMIC may, in its sole discretion, elect not to proceed with the project, and may elect not to accept any or all proposals for any reason.
3. The working languages of LMIC are English and French. Proposals to this Request for Proposal can therefore be in either of these languages.
4. At all times, the supplier has the responsibility to notify LMIC, in writing, of any ambiguity, divergence, error, omission, oversight or contradiction contained within the RFP document as it is discovered.
5. LMIC assumes no responsibility or liability arising from information obtained in a means other than those prescribed in this RFP.
6. Vendors may amend or withdraw their submissions prior to the closing date and time specified in the RFP by way of email notification to LMIC. After the closing date and time, proposals may be irrevocable at the discretion of LMIC.
7. Proposals submitted shall be final and may not be altered by subsequent offerings, discussions, or commitments unless the supplier is requested to do so by LMIC.
8. The confidentiality of the Supplier's proposal will be maintained by LMIC, except as otherwise required by law or by order of a court or tribunal. Vendors are advised that their proposals will, as necessary, be disclosed on a confidential basis, to LMIC advisers

retained for the purpose of evaluating or participating in the evaluation of their proposals. If a supplier has any questions about the collection and use of personal information pursuant to this RFP, questions are to be submitted to the Inquiries Contact.

9. There will not be a public opening. All proposals and accompanying documentation received under this competition will become the property of LMIC and will not be returned.
10. LMIC may, at its discretion, make certain changes and exceptions to the terms and conditions outlined in this document.
11. LMIC reserves the right to waive minor non-compliance by a supplier with the requirements of the RFP. This will allow LMIC to consider and possibly accept any proposal which is advantageous to it even though the proposal may be non-compliant in some minor respect.
12. LMIC reserves the right to accept or reject, in whole or in part, any or all proposals.
13. LMIC reserves the right to cancel and/or re-issue this RFP at any time for any reason without penalty.
14. Prices quoted are to be held firm for a minimum of 120 days following the RFP closing date, and shall remain in effect through the duration of the agreement.
15. LMIC shall, at the request of a supplier who responded to this RFP, conduct a debriefing after the awarding of the agreement, to any Vendors, for the purpose of providing Vendors with feedback on their proposal. All requests must be made in writing to the Inquiries Contact and must be made within thirty (30) days of notification of award. Only Vendors that submitted a proposal to the competitive procurement process may request a debriefing.
16. The supplier's proposal may form part of the contractual agreement by attachment and may be incorporated by reference. Claims made in the proposal may constitute contractual warranties. Any provision in the proposal may be included in the contractual agreement as direct provision thereof.
17. Governing Law – This Request for Proposal is governed by the laws of the Province of Ontario.
18. LMIC reserves the right to eliminate mandatory requirements unmet by all bidders/proposers.

6. APPENDICES

6.1 Appendix A – Definitions

Throughout this RFP, the following definitions apply:

“Agreement” means the written contract between the preferred supplier and LMIC to provide the services contemplated by this RFP.

“Client” (referring to LMIC) means the Office or Secretariat of the Labour Market Information Council.

"Conflict of Interest" includes any situation or circumstance where, in relation to a LMIC procurement competition, a participating vendor has an unfair advantage, a perception of an unfair advantage or engages in conduct, directly or indirectly, that may give it an unfair advantage, including:

having, or having access to, information in the preparation of its proposal that is not available to other vendors, but such does not include information a vendor may have obtained in the past performance of a contract with LMIC that is not related to the creation, implementation or evaluation of this or a related procurement;

communicating with any person with a view to influencing preferred treatment in the procurement competition (including but not limited to the lobbying of decision makers involved in the procurement competition); or

engaging in conduct that compromises, or could be seen to compromise, the integrity of the open and competitive procurement competition or renders that competition non- competitive, less competitive, or unfair.

“Desirable” “should” means requirements that may have a degree of importance to be objectives of this RFP and may be rated.

“Entity” refers to LMIC for administrative purposes.

“Evaluation Team” means the individuals who will evaluate the proposals on behalf of LMIC.

“Labour market information” or “LMI” is knowledge, facts, data and relevant institutional information on the supply and demand of labour, including economic and labour market trends, education and skill requirements, wage rates, program results and outcomes, etc.

“Labour Market Information Council” or “LMIC” is a federal non-profit corporation with a Board of Directors consisting of FPT government officials and an office located in Ottawa, ON. As a coordinating body, LMIC will help to ensure better value from existing LMI investments across Canada and foster the exploration of new opportunities for collaboration among governments and with stakeholders.

“Mandatory” “shall”, “must”, and “will” means requirements that are imperative and must be met in order for the proposal to receive consideration.

“Non-Compliant” means the proposal fails to provide sufficient detail necessary to evaluate the proposal against the mandatory requirements outlined in this RFP document.

“Optional” “may” “might” or “could” means requirements that might be rated.

“Preferred Supplier” means the supplier who has been selected through the competition, but with whom a contractual agreement has not been signed.

“Proposal” means the document submitted by a supplier in response to the RFP.

“Procurement Services” means the Purchasing Branch under the Purchasing Act.

“Rated” “should” means requirements that will be evaluated in accordance with the evaluation criteria and assigned points.

“RFP” means Request for Proposal.

“Services” means the functions, duties, tasks and responsibilities to be provided by the supplier as described in this RFP.

“Successful Vendor” means the organization responding to this RFP who is determined to be successful in this competition and has signed a contractual agreement.

“Vendor” means an individual or a company that submits, or intends to submit, a proposal in response to this Request for Proposal.

6.2 Appendix B – Detailed Description of Data

LMIC accesses the bulk of its data via Statistics Canada’s public website and the Federal Research Data Centre (FRDC):

- *Public Website*: Aggregated data tables (formerly “CANSIM” tables) can be pulled directly through API calls or as automated downloads of CSV files.
- *FRDC*: Restricted access to microdata is available at RDCs around the country, and the FRDC at Statistics Canada’s headquarters in Ottawa. Microdata are highly restricted and can be extracted only when aggregated within the FRDC by LMIC’s Research, Data and Analytics team. Following the aggregation of the microdata, a Statistics Canada committee validates the resulting data and code used to ensure privacy laws are respected. Once approved, Statistics Canada sends the data either by email or through a secure FTP server that they host.

Statistics Canada’s public website API can enable full automation of pulling, structuring and pushing data (and metadata) to LMIC Data Hub.

FRDC-sourced data requires a number of human interventions and *ad hoc* data transference before ingesting into the Data Hub. Moreover, LMIC will need to create and structure all metadata associated with FRDC-sourced data. Our objective is to extract data in a fully regularized fashion on a monthly basis.

LMIC also collects data from other entities, including API access to web-scraped job vacancies and *ad hoc* data sharing arrangements made with third parties. Other API data access points could become available in the future, and *ad hoc* data sharing is expected to continue.

The LMIC Data Hub hosts all data obtained from Statistics Canada and other sources. Cleaned and structured data is ingested into the Hub programmatically (e.g., from several API sources) and, where not possible, through a regularized workflow path that mixes automation and human intervention.

Data hosted in the Data Hub is fully accessible by LMIC's Research, Data and Analytics team through either a direct interface into an analytical software tool (e.g., R and Python) or as downloadable snippets that can be analyzed on local machines and/or LMIC's local server.

Data hosted in the Data Hub is accessible by third parties within proscribed limits set by LMIC. Approved third parties will be given access to specific segments of the data in the Data Hub, and these accessible segments will differ among the approved third parties.

A wide variety of labour market and related data is hosted in the Data Hub. The data tables in the Data Hub will not share a common key but will share higher-level relationships that should be retrievable. For example, T1 Family File (T1FF) tax data contains employment income available at the Forward Sorting Area (FSA)-level but is not available by occupation; Self-reported hourly wages from the Labour Force Survey (LFS) are available at the Canada-level for many occupations. A potential use case is a query seeking income data; if "income" is queried, then both of the foregoing data types should be retrieved.

All data are associated with both a time dimension (e.g., reference month) and geographic location within Canada (e.g., province). Both the temporal and geographic components vary in terms of specificity and granularity, **and the relationship between higher order levels (e.g., Eastern Ontario) and lower levels are not necessarily 1-to-1** (e.g., the Ottawa-Gatineau CMA crosses provincial boundaries).

6.3 Appendix C – Sample API Use Cases

The Data Hub API will be used by end-users both internal to and external to LMIC. The following sample use cases are provided in order to give insight into the possible external end-user required functionality of the proposed digital tools.

6.3.1 Territorial Government Health Department

Organization: Department of Health, Government of Nunavut

Use Case: The Department of Health works with an external consultant to develop a new interface support activities in their [Inuit Employment Plan](#) to allow users to explore career options.

How they will use the Hub: The Department contracts consultants to create an interactive, multi-lingual platform tracking trends in Healthcare career pathways in other provinces and territories. The platform would draw on data from the LMIC Data Hub to populate information related to the number of job openings in the health field, typical job requirements and skills, as well as average earnings. In the platform, the Hub data can then be paired with local knowledge of training resources and other support information to guide users interested in pursuing jobs in this field.

Impact: An increase in the number of people trained in health-related fields, thereby helping reduce a persistent labour and skills shortage in Nunavut.

6.3.2 Regional Health Research Centre

Organization: Qaujigiartiit Health Research Centre (QHRC)

Use Case: QHRC wants to expand their [Health NU app](#) to have a capacity building employment pathway component for those who live in the region. Currently these apps service new members of the health care work force in Nunavut to better educate them on everything from working and communicating in a multi-lingual environment, the organization of the health system, the Inuit historical context of our regions, all the way down to things to pack.

How they will use the Hub: The information in the app will be made more up-to-date by pulling the latest data and forecasted estimates from the Hub related to emerging jobs in territory.

Impact: Improved information for individuals to decide where to work and what to expect in the near term with decisions related to relocation.

6.3.3 Employment Centre Supporting Newly Arrived Immigrants

Organization: Vanier Community Service Centre (Service Ontario)

Use Case: Job developer supporting newly arrived immigrants to the Ottawa region wants to increase the number of employers connecting with their clientele.

How they will use the Hub: The job developer draws upon work requirement and skills requirements for a variety of occupations and industries from the Data Hub. Using this data, they use their in-house resources to suggest short-term training programs for clients and to find local employers in the relevant fields.

Impact: Improved placement of newly arrived immigrants into job that match their interests, educational background and skills profile.

6.3.4 Skills Retraining Program (Not For Profit Organization)

Organization: Skills for Change

Use Case: The organization wants to offer clients personalized skills training advice for newly arrived immigrants and refugees related to jobs in the trades (e.g., welding).

How they will use the Hub: Skills for Change is offering information on what training programs for the trades are available, but lacks clear insights on average wages and employment opportunity (in different regions) in Ontario and other parts of the country. They want to develop an in-house tool that support staff will use to extract up to date and reliable information concerning expected earnings and employment levels in different trades. They will also be able to obtain cost of living information for different locations, which is a key informational need of recent immigrants. The information will be provided to clients in a personalized and contextualized way through one-on-one consultations.

Impact: Relocation decisions by new Canadians are improved through the use of contextualized information related to the earnings / cost of living balance in different regions and for different skilled trades. By improving the spread of workers to smaller communities, labour shortages in the trades can be reduced.

6.3.5 Counsellor at Smaller / Regional University

Organization: Acadia University

Use Case: The university has limited resources to collect data on student placements from around the country, placing it at a disadvantage relative to larger organizations. The counsellors want to access data on the number of graduates and co-op placements from other regions of the country to compare to their internal figures and make program improvements where possible.

How they will use the Hub: The university develops a simple platform that integrates in-house data on placements with national and regional comparisons related to the number of graduates, fields of study and co-op placements. The national and regional comparisons are drawn automatically each year from the Hub and include now-casts of out of data information.

Impact: With better information, the resource-constrained university improves its placement programs and improves student outcomes in the near-term and increases the attraction for others to attend the university.

6.3.6 Employment Service Organization

Organization: YMCA Canada (non-profit organization)

Use Case: The YMCA offers youth employment services but wants to offer an app for clients to be able to explore career-related questions on their own which can then be the basis for deeper discussions with YMCA staff.

How they will use the Hub: The organization partners with an app development firm to create a simple, user-friendly app that draws on information from the Hub related to profiles of different

types of jobs and occupations (along with quantitative information related to typical wages and required education or training). The combination of more descriptive information (e.g., typical career pathways in different fields) linked to wages and the types of skills employers demand, will support specialized help the YMCA offers related to resume writing and interview preparation.

Impact: More under-employed or youth not in employment, education, or training (NEET) will be matched with jobs and employers better suited to their preferences, increasing employee retention and labour market outcomes.

6.3.7 Career Counsellors Support Organization

Organization: Canadian Career Development Foundation (CCDF)

Use Case: CCDF wants to increase their members' understanding and use of labour market information (LMI) by developing an interactive platform that marries reliable data with members' specific experiences and insights.

How they will use the Hub: CCDF's network of career development practitioners (CDPs) have expressed frustration in finding and understanding labour market information (LMI). Therefore, CCDF partners with a web development firm to create an interactive platform that enables user input (e.g., a wiki), populated with the core types of LMI sought by CDP clients (e.g., wages, skills requirements). This information is regularly updated as new data become available. The wiki-type interface allows CDP users from across the country to contribute their more localized, specific information into the platform and to provide real-time feedback to LMIC regarding the type of content and structure of information fed into this tool.

Impact: Career practitioners have direct access to a high quality LMI tool that they can help improve over time, which increases the quality of advice they provide to a wide variety of clients while improving their understanding of labour market data and how to contextualize it.

6.4 Appendix D – Current API Specifications

Documentation about LMIC's Data Hub and API are available at <https://datahub.lmic-cimt.ca/documentation>.