



## **REQUEST FOR PROPOSALS**

<b>Project Name:</b>	Predictive Water Supply/Demand Tool
<b>Type of Service:</b>	Software development, AI and predictive analytics, training
<b>Project Timeline:</b>	October 15, 2021 to February 11, 2022
<b>Proposal Deadline:</b>	9:00am on October 11, 2021
<b>Project Cost:</b>	Not to exceed \$150,000

### **Background**

The Enterprise Machine Intelligence and Learning Initiative (EMILI) is an industry-led non-profit organization established to accelerate the growth of the agri-food industry in Manitoba, and the other prairie provinces, by promoting digital agriculture and digital agriculture technologies.

In 2021, the Province of Manitoba provided EMILI with a grant to establish a Water Strategy Fund as part of the creation of a new provincial water management strategy. Part of the fund is to be used to enable projects that can be applied to support climate change adaptation, environmental sustainability and agricultural productivity. The Water Strategy Fund is overseen by a Committee responsible for governance of the fund, including the evaluation of project proposals. The Province's announcement of the creation of a new water management strategy can be found [here](#).

### **Key Issues**

- Water supply and demand are key elements of water sustainability, and each is linked closely with economic, social and environmental aspects of Manitoba's development.
- While the overall impacts of both climate change and economic development on water supply and demand are somewhat understood, the degree and speed to which they play out, and/or react to interventions, is not.
- The unique value desired from a predictive water tool powered by AI and machine learning would be its ability to regularly evaluate short, medium and long term water supply/demand scenarios for different geographic regions and sectors in Manitoba based on non-linear scenarios and multidimensional uncertainty.
- The predictive analytics produced by the tool -- incorporating climate impacts on water availability, projections for water availability and supply, combined with water demand projections across key sectors -- would be used to assist policy development, optimization of water use, and better management of water resources by decision makers at the municipal level, as well as those in agriculture, agri-food processing, irrigation and livestock industries.



### **Targeted Outcome**

The creation of a functional software tool powered by machine learning that can produce groundwater and surface water supply/demand forecasts for key sectors -- for the next 5 years (short term), 15 years (medium term), and 25 years (long term), including high-growth, low-growth and business as usual scenarios -- within the south central and north central economic regions of Manitoba based on available data. The tool should also have a demonstrable ability to self-update its forecasts at any point given the inclusion of new data.

### **Services Requested Summary**

- Meeting with key provincial stakeholders to determine the available water-related datasets, resources and sources to use as inputs to achieve the targeted outcome - Province of Manitoba to provide estimates of water supplies currently available for allocation in the study region;
- Development of sector-based scenarios for evaluation with input from provincial stakeholders. Medium- and long-term scenarios should include an assessment of the anticipated impacts of climate change on water supply/demand. Key sectors for evaluation will include, but are not limited to municipal (including residential and commercial), agricultural (including irrigation and livestock), and food and agri-processing;
- Software development and demonstration - including updates to forecasts;
- Provide regular progress update reports to EMILI, including meetings with identified expert advisors from the Province at beginning, mid-point and end of project to allow for input and to review process and outcome; and
- Transfer of ownership of both beta and final versions of the tool to the Government of Manitoba, including the provision of training on its implementation, use and maintenance.

### **Bidder Qualifications**

The following entities are not eligible bidders:

- Any provincial government body, entity, agency, organization, Crown Corporation, or any “reporting organization” as defined in *The Financial Administration Act (MB)*
- The federal government
- The government of another province or territory within Canada or any government entity outside of Canada

Notwithstanding the above exclusions, the following are eligible-bidders:

- A watershed district established or continued under *The Watershed Districts Act* or an entity established for similar purposes under a law of Manitoba or Canada;
- A university as defined in section 1 of *The Advanced Education Administration Act* or an entity established for similar purposes under a law of Manitoba, Canada, or another jurisdiction.



Bidders should be able to point to prior successful experience with the full spectrum of machine learning software development, implementation and training. Experience with environmental and/or landscape data is an asset.

### **Proposal Format**

The proposal should be no more than 10 pages, and must contain the following items and be presented in the following order:

1. Letter of Introduction  
*A letter introducing the bidder with a high-level summary of the proposal and narrative explaining the overall value proposition of the proposal*
2. Bidder Qualifications  
*A professional summary of the bidder organization and key individuals involved in the project*
3. Project Approach  
*An outline of how the bidder intends to approach to achieving the project deliverables including summary of management structure, technical approach, methodologies used, and value-added services to be provided in addition to the project requirements.*
4. Project-Specific Requirements  
*Any technical requirements bidder anticipates EMILI and other stakeholders will need to provide in order to fulfill project objectives*
5. Project Timeline  
*An outline of the sequencing and expected start/end times of work entailed within the project.*
6. Project Scope  
*Clearly articulated listing of elements within the scope of the proposed project and those excluded from the scope.*
7. Costing Summary  
*A listing of billable components of the project, the associated costs, and the payment schedule.*

### **Proposal Inquiries**

For inquiries relating to the RFP, please contact:

Kyle Hiebert  
Senior Program & Policy Analyst  
[water@emilicanada.com](mailto:water@emilicanada.com)

### **Proposal Submission**

Interested bidders will electronically forward their submission as a single PDF file by email to:

Kyle Hiebert  
Senior Program & Policy Analyst  
[water@emilicanada.com](mailto:water@emilicanada.com)

Mention “Proposal Submission: AI Predictive Water Tool” in the subject line of your email.



Deadline for application is 9:00am on October 11, 2021

We thank bidders for their interest, however only those selected for further consideration will be contacted.

### **Evaluation Criteria and Process**

The evaluation criteria for the proposals are as follows:

- Bidder qualifications
- Project approach
- Value for money
- Timetable
- Unique added value and/or additional elements bidder can propose to enhance the targeted outcome
- Bidder's environmental footprint and stewardship efforts

The above list of criteria is not exhaustive and other criteria may be considered.

EMILI's Water Strategy Fund Committee will serve as the evaluation committee. The committee may, at its sole discretion, retain additional committee members or professional advisors as is determined to be prudent or necessary.

The RFP evaluation process is a selection procedure. It will be finalized through completion of the following stages:

1. Bidders submit proposals to EMILI in response to this RFP.
2. EMILI will screen each proposal to ensure that the proposals meet all the mandatory requirements of this RFP as outlined in the above Proposal Format section. At this time, at its sole discretion, EMILI may also request missing or supplemental information from some or all of the bidders.
3. Proposals that meet the mandatory requirements of this RFP will be evaluated and ranked by the EMILI Water Strategy Fund Committee to determine which Proposals provide the best overall value. As requested by the committee, EMILI may at this time again request supplemental information from some or all of the bidders.
4. Final project selection is based on the established evaluation criteria, as well as other factors such as the Water Strategy Fund Committee's strategic priorities.

Final project selection is also subject to mutual agreement of the terms of the engagement.