

**4R NUTRIENT STEWARDSHIP MEMORANDUM OF UNDERSTANDING**  
**June 2015**

**THIS MEMORANDUM OF UNDERSTANDING** made this 16<sup>th</sup> day of June, 2015.

**BETWEEN:**            **GOVERNMENT OF MANITOBA**, as represented by the Minister of Agriculture, Food and Rural Development, and the Minister of Conservation and Water Stewardship

(hereinafter collectively referred to as "Manitoba")

**AND:**                **CANADIAN FERTILIZER INSTITUTE**, a corporation incorporated under Part II of the Canadian Corporations Act, having its head office located in Ottawa, Ontario

(hereinafter referred to as "CFI")

**AND:**                **KEYSTONE AGRICULTURAL PRODUCERS INC.**, a general farm policy organization that works to ensure primary production in Manitoba remains profitable, sustainable and globally competitive

(hereinafter referred to as "KAP")

**Background and Purpose**

The parties previously entered into a 4R Nutrient Stewardship Memorandum of Understanding (MOU) dated January 15, 2013 which is to expire on December 31, 2015. The parties wish to enter into this MOU to extend their arrangement for an additional three-year term.

The purpose of this Memorandum of Understanding (MOU) is to link Manitoba's objectives for environmental performance with the nutrient stewardship programming developed by Canada's fertilizer industry. The parties agree that the *Right Source @ Right Rate, Right Time, Right Place®* approach to nutrient management (commonly referred to as *4R Nutrient Stewardship*), established by the CFI provides the framework to help meet the common goal of sustainability outlined in this MOU.

**Commitment to Sustainability**

Canada's fertilizer industry is committed to achieving sustainability in partnership with its stakeholders. The fertilizer industry continues to strengthen environmental stewardship by supporting the implementation of Beneficial Management Practices (BMPs). It is also



committed to promoting the measurement of the impact of these efforts on the economy, society and the environment.

### **The Right Source @ Right Rate, Right Time, Right Place® Nutrient Stewardship System**

The fertilizer industry has established the *Right Source @ Right Rate, Right Time, Right Place®* (4R) Nutrient Stewardship system in cooperation with government, researchers, customers, and the public. This approach ensures that nutrients are applied using the right source at the right rate, time and place through the adoption of BMPs by producers to achieve economic, social and environmental sustainability. It recognizes that BMPs must be customized to fit each farm's unique climatic, soil, cropping and operational conditions. This is achieved, as needed, with professional input from Certified Crop Advisers, professional agrologists and government extension specialists who work with farmers to assess their situations and develop management plans. All sources of crop nutrients (commercial fertilizers, livestock manure, biosolids and compost) are addressed by the 4R Nutrient Stewardship System.

Continuous improvement can be achieved by employing measures that assess the impacts of source, rate, time and place BMPs on environmental, economic, and social criteria. Based on this feedback, adjustments to practices, policies, as well as research and extension programming can then be made to further enhance sustainability. While significant work has been done to establish science-based measures, there is much progress yet to be made in this regard.

### **The Manitoba Approach**

**Policy and Legislation** – In 2003, Manitoba announced the Lake Winnipeg Action Plan, a commitment to reduce the contributions of excess nitrogen and phosphorus to Lake Winnipeg. As part of the Action Plan, the Lake Winnipeg Stewardship Board was established to help identify necessary actions to reduce nitrogen and phosphorus loading to Lake Winnipeg.

Released in 2007, the Lake Winnipeg Stewardship Board's final report addressed nutrients, their sources and their impacts on Lake Winnipeg. The report included 135 recommendations covering 38 different areas of concern. Some of these recommendations are directed at reducing the contribution to nutrient loading in the watershed coming from agricultural sources.

In 2010, Canada and Manitoba signed a "Canada–Manitoba Memorandum of Understanding Respecting Lake Winnipeg and the Lake Winnipeg Basin" to provide a framework for the ongoing coordination of federal and provincial action relating to Lake Winnipeg.

In 2011, Manitoba announced a commitment to reduce phosphorus concentrations in Lake Winnipeg by up to 50 per cent, thereby reversing the frequency and severity of algae blooms and returning the lake to a pre-1990s state.





Over the last decade, Manitoba has taken action to reduce nutrient loading including education, extension, and incentives, investments, science and research, and new and modernized legislation. Agriculturally-related pieces of legislation include:

- the Livestock Manure and Mortalities Management Regulation, under *The Environment Act*, passed in 1998
- the Nutrient Management Regulation, under *The Water Protection Act*, passed in 2008
- *The Save Lake Winnipeg Act*, passed in 2011.

In 2013, Manitoba and the South Basin Mayors and Reeves announced the Lake Friendly Accord, a commitment to improve water quality by reducing nutrients in rivers and lakes through the engagement of all. Manitoba is gathering signatories to the Accord and the intent is to include all stakeholders including agricultural stakeholders such as CFI and KAP.

In 2014, Manitoba launched a new Surface Water Management Strategy to support decision making for the future management of surface water in the Province. This strategy is part of *TomorrowNow* – Manitoba's Green Plan; an eight-year strategic action plan for mobilizing Manitobans to work together to protect the environment while ensuring a prosperous and environmentally-conscious economy. Other initiatives such as the new approach to sustainable drainage and water retention are also part of *TomorrowNow*.

Manitoba has also committed to reducing greenhouse gas emissions, including those from the agriculture industry. To achieve this goal, legislative and financial initiatives were undertaken to facilitate adoption of particular BMPs meant to reduce emissions. The principal piece of provincial legislation targeting this issue is *The Climate Change and Emissions Reduction Act*.

**Extension** – Environmental farm planning is the flagship extension vehicle for environmental stewardship in Manitoba. Completion of an Environmental Farm Plan (EFP) informs producers about the assets and risks in their operations and encourages them to take action to address any concerns. Nutrient management planning is one of the key practices described in the EFP that producers can adopt, and have employed extensively, to optimize production and minimize environmental risk.

Through ongoing information exchange and training at conferences, workshops, and field tours, industry staff, agronomists and government specialists maintain high levels of knowledge and skills in nutrient management, including the principles of *4R Nutrient Stewardship*. These intellectual assets are regularly put to use in advising producers in their management decisions.

KAP has played a leadership role in promoting environmental stewardship for Manitoba farmers and is an important partner in the evolution of voluntary nutrient management planning in Manitoba.

Lake Winnipeg South Basin Mayors and Reeves Inc., with financial support from Manitoba and partners, have initiated the 'Lake Friendly Products Campaign' to promote the use of environmentally-friendly products and practices, including by agricultural producers, within the





Lake Winnipeg basin. The program has since expanded to include the “Do What Matters” campaign and certification of other Lake Friendly practices.

**Management Principles** – Managing nutrients properly offers both economic and environmental benefits to producers and the rest of society. Efficient use of nutrients from commercial fertilizers, manure or other sources reduces input costs for crop production and minimizes the risk of nutrient loss to ground and surface water as well as emissions of nitrous oxide to the atmosphere, one of the greenhouse gases.

*4R Nutrient Stewardship* provides an understanding of how various crop nutrients behave in the landscape, how they are used by crops and how to prevent their loss into the environment. Understanding which soils may pose a heightened risk of nutrient loss can assist agricultural producers in managing nutrients more efficiently and in protecting the environment. Adjustments in the crop nutrient source and application rate, timing, and placement method may greatly reduce the risk of nutrient losses.

**MOU Principles:**

1. Manitoba and CFI understand that economic, social and environmental performance improvements must be undertaken in balance to achieve sustainability.
2. CFI and Manitoba acknowledge that there is a need to manage nutrient application to land to reduce nutrient loading to waterways across Manitoba including Lake Winnipeg to improve environmental performance.
3. CFI and Manitoba acknowledge that nutrient management planning for crop production has been recognized as an essential part of environmental farm planning through its inclusion in the Environmental Farm Plan workbook.
4. Manitoba and CFI recognize that sustainability is aided by the adoption and maintenance of farm-specific BMPs that follow the principles of applying nutrients in the right forms at the right rate, time and place.
5. CFI and Manitoba agree that strategies for promoting the adoption of BMPs are often most effective when based on voluntary action by farmers encouraged through extension and incentives developed in cooperation with farmers.
6. Manitoba and CFI recognize that BMPs must be science-based and that ongoing research is essential to validating the efficacy of BMPs, such as those under the *4R Nutrient Stewardship*, in achieving economic, social and environmental goals.
7. CFI and Manitoba recognize the critical role of the private sector in the development and implementation of on-farm solutions to ensure sustainability. In particular, trained professionals such as Certified Crop Advisers (CCAs) and members of good standing with



the Manitoba Institute of Agrologists (MIA) working directly with producers are well-positioned to facilitate adoption of BMPs to achieve sustainability goals.

8. CFI and Manitoba recognize KAP as the main farm advocacy group to be involved in carrying out provisions of this MOU.





### Action Items:

1. CFI and Manitoba will work together with KAP to undertake various activities to promote the adoption of the ***Right Source @ Right Rate, Right Time, Right Place®*** Nutrient Management System.
2. The various activities to be undertaken may include:
  - (a) the creation, printing, distribution and web-posting of publications;
  - (b) the development of training materials and programs including social media applications as well as web-based training materials for farmers to access via the GrowZone website to increase farmer adoption of BMPs within the performance areas of the 4Rs;
  - (c) the delivery of 4R nutrient management training programs, in cooperation with professional associations (e.g. Prairie CCA Board and the MIA), for qualified professionals who can then formally offer 4R nutrient management planning services to producers;
  - (d) field extension events, catering to producers or agronomists (or both), that illustrate and promote the concepts and details of nutrient management according to the 4Rs;
  - (e) field trials that collect data to validate the agronomic and environmental efficacy of 4R practices and improved nutrient use efficiency;
  - (f) projects that compile data from all suitable studies to refine nutrient uptake and removal values for Western Canadian crops;
  - (g) continue the work with stakeholders to establish appropriate metrics for determining the level of adoption of 4R nutrient management systems. Data sources may include a survey of producers undertaking an Environmental Farm Plan and interviews with agri-retailers and consulting agronomists; and
  - (h) working with the research community to explore potential measures that would validate and improve the effectiveness of the ***Right Source @ Right Rate, Right Time, Right Place®*** system of fertilizer use. Agronomic measures could include soil and crop parameters in research trials that confirm improved efficiencies with adoption of superior practices. Environmental measures could include soil, water and air parameters examined in nutrient fate studies that track the transformation and movement of nutrients.
3. KAP and CFI commit to the shared goal of improving water quality by reducing nutrients in rivers and lakes and may undertake to sign the Lake Friendly Accord and supporting Annex documents by December 31, 2015.



4. The parties acknowledge that these various undertakings are subject to future circumstances (e.g. weather conditions, site suitability, expertise availability) that are unforeseeable and may impede the completion of certain tasks (e.g. establishment of field demonstrations, delivery of field extension events, development of individual extension projects) necessary for the success of the activities. As such, the parties are not committed to any specific undertakings by signing this MOU.
5. The 4R Implementation Committee established under the former MOU which is comprised of members from each of the parties to this MOU, will continue to:
  - (a) select which activities will be undertaken by the parties to enable the pursuit of this MOU's objectives;
  - (b) once an activity is selected, coordinate, organize, plan and oversee the implementation of the activity; and
  - (c) work with the Manitoba Soil Fertility Advisory Committee where appropriate.
6. CFI will provide financial support of up to \$50,000 annually for three years from the effective date of this MOU until the end of CFI's fiscal year end (June 30, 2018) to enable pursuit of this MOU's objectives. In particular, CFI will provide funding to third party entities that incur expenses while undertaking the activities that support the objectives of this MOU. The third party entities may include researchers, producer groups and consulting agronomists as appropriate for each activity. CFI will contract with and make payments directly to those third party entities. CFI shall not be obligated to advance any funds hereunder until such advance has been approved in writing by the Committee.
7. In addition, the parties will make in-kind contributions in the form of staff time (e.g. staff participation on the Committee and selected activities) and will also cover each of their own operating expenses, such as travel costs, toward this effort.
8. In addition to the selected activities, CFI will continue to assist the public's education about the benefits of nutrient management through ongoing support to the Nutrients for Life Foundation Canada. This non-profit organization's mandate is to help educate youth in schools about the critical role nutrients play in feeding the world, as well as the benefits of nutrient management and sustainability.

#### **Term of MOU:**

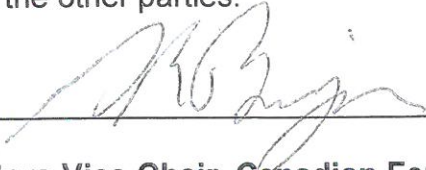
The term of this MOU shall commence on the 1<sup>st</sup> day of July, 2015, and end on the 30<sup>th</sup> day of June, 2018. This MOU shall supersede and replace the previous 4R Nutrient Stewardship Memorandum of Understanding dated January 15, 2013 between the parties. The parties may extend this MOU for an additional term of three (3) years by written agreement prior to the expiration of this MOU.

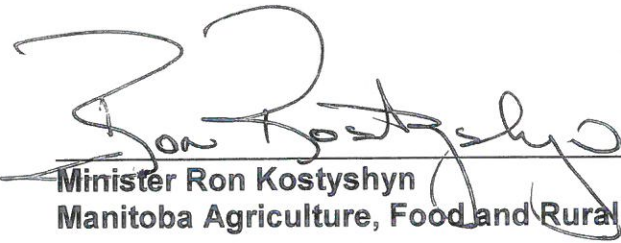
#### **Termination:**

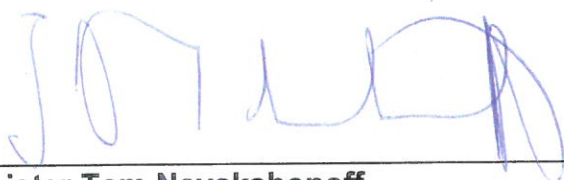




The parties may terminate this MOU at any time by written agreement. Any individual party may terminate its participation in this MOU at any time upon providing six (6) months advance written notice to the other parties.

 Date: June 16, 2015  
**Steve Biggar,**  
**Board of Directors Vice-Chair, Canadian Fertilizer Institute**

 Date: June 16, 2015  
**Minister Ron Kostyshyn**  
**Manitoba Agriculture, Food and Rural Development**

 Date: JUN 16 2015  
**Minister Tom Nevakshonoff**  
**Manitoba Conservation and Water Stewardship**

 Date: June 16 / 2015  
**Dan Mazier**  
**President, Keystone Agricultural Producers Inc.**

