



January 9<sup>th</sup>, 2018

Attn: Margaret Crowley  
BC Ministry of Environment and Climate Change Strategy – AWCR Review  
PO Box 9341 Stn Prov Govt  
Victoria, BC V8W 9M1

**Re: Response to the Agricultural Waste Control Regulation Intentions Paper**

This submission to the B.C. Ministry of Environment and Climate Change Strategy provides the POLIS Water Sustainability Project's<sup>1</sup> response to the November 2017 Agricultural Waste Control Regulation (AWCR) Review Intentions Paper.

To provide context for this submission, the POLIS team was privileged to be appointed by the Minister to lead a review of the Hullcar Aquifer situation, and we recognize this current process of updating the AWCR as a critical recommendation resulting from that review. As Project Lead—both at POLIS and in the Hullcar Aquifer review—I have been fortunate to have numerous discussions and engage with government and leading experts related to the importance of better control of agricultural waste.

In our view, the AWCR is a critical part of the regulatory regime related to source water protection in British Columbia. Updating this regulation to provide more robust safeguards for environmental and human health is one of the key recommendations provided in the final POLIS report on the Hullcar Aquifer situation, [\*From Crisis to Solutions: Towards Better Source Water Protection and Nutrient Management in the Hullcar Valley\*](#) (November, 2017). Therefore, we welcome the Province's review of the existing regulation as a positive step towards ensuring agricultural practices in B.C. are consistent with the provision and protection of clean and safe drinking water. We believe the Ministry has done a good job of responding to the POLIS Recommendations Report and recommendations in the AWCR Intentions Paper, and commend staff on their diligence and hard work.

In our analysis of the AWCR Intentions Paper, we note four priority areas that require further revision and detail to ensure the final regulation adequately protects environmental and human health, in order to better balance water security and a sustainable farming sector. In addition to our recommendations to government to fill the gaps in each of these four areas, we also provide a number of more general, high-level comments at the end of our submission.

On behalf of the University of Victoria's POLIS Water Sustainability Project,

Oliver M. Brandes, BA(H) DipRNS M.Econ J.D.  
Co-Director, POLIS Project on Ecological Governance  
Associate Director, Centre for Global Studies  
Adjunct Professor, Faculty of Law and School of Public Administration  
Senior Research Fellow, Centre for Global Studies  
Chair, Forum for Leadership on Water (FLOW)  
Affiliate, Brock Sustainability Research Centre

<sup>1</sup> The POLIS Water Sustainability Project is based at the Centre for Global Studies, University of Victoria.



**1. Clarify the definitions, triggers, and process for adding aquifers to the list of vulnerable aquifers. This must include clear criteria for adding an aquifer to the list, and a process for a water supplier to nominate an aquifer based on existing or emerging concerns.**

The AWCR Intentions Paper states that the revised AWCR will apply a risk-based approach, under which more stringent protections will be required in high-risk areas. A high-risk area includes land over a vulnerable aquifer—an area that has one or more aquifers classified as highly or moderately vulnerable under the British Columbia Aquifer Classification System.

Government needs to ensure clarity on how the ongoing process for adding aquifers to this “vulnerable aquifers list” will occur. The regulation must set out simple, defensible criteria for adding an aquifer to the list. Specifically, regions such as the Hullcar Valley must be included as high-risk areas. In addition, we believe an important element towards this goal is for the regulation to establish a process whereby a water supplier or local water board (such as a local water district) is able to nominate an aquifer based on existing or emerging concerns. These local entities will often have access to the specific and relevant local knowledge to ensure a comprehensive regime is implemented.

**2. Clearly define a set of triggers for development of Nutrient Management Plans and a schedule for inspection of farms with plans. Require nutrient management plans to be made accessible to the public.**

The AWCR Intentions Paper lists a series of potential additional triggers for Nutrient Management Plans, including animal density. However, it fails to commit to a specific animal unit trigger. Government must follow through with their intention to include an additional trigger for nutrient management plans based on the number of animal units, and set that mandatory trigger threshold at reasonable number (we support the suggested 50 animal units provided by other experts as part of this submission process). This number of animal units is reasonable—higher than the number requiring plans in Denmark and Washington State and appropriate for the broader B.C. context.

The AWCR Intentions Paper briefly refers to compliance inspections in the context of record-keeping and corrective actions. However, there is no detail about how often government will conduct inspections, or for which operations. Government must commit to conducting regular annual inspections of operations with nutrient management plans, and specify how often they will occur.

Government must mandate that all plans are available to the public and posted on a region-specific registry—this is critical for transparency and building public trust and confidence.

**3. Ensure that the regulation requires a 30 per cent safety factor for all nutrient management plans in high risk areas until a Director confirms, with reference to post-harvest nitrate test results, that the plan calculations are accurate and a safety factor is no longer needed.**

The AWCR Intentions Paper states that a Director may require a nutrient management plan on a case-by-case basis if there is evidence of negative impact, or potential negative impact; the nutrient management plan must be independently verified, and the Director may require a safety factor.



Several parts of the POLIS Recommendations Report state that in high-risk and emerging problem areas, nutrient management plans must have safety factors because the calculations that produce these plans are approximations and intended to provide optimal growth of crops. The POLIS Recommendations Report states that “post harvest nitrate tests in conjunction with independently verified nutrient management plans that include a safety factor are the most efficient means of preventing new leaching from occurring” (see footnote 38 p.13). The POLIS Recommendations Report suggests that nutrient management plans need to have a safety factor built in of 30 per cent, which would help create an appropriate buffer for unforeseen circumstances and variables that the original nutrient management plan calculations may not have adequately accounted for, such as reduced plant growth. The safety factor could be reduced or removed once the Director confirms, with reference to post-harvest nitrate test results, that the plan calculations are accurate and a safety factor is no longer necessary.

In essence, we believe that government should reverse the onus so that safety factors are built in (not at the discretion of the Director) but that those safety factors can be removed once confirmed they are not needed (at the discretion of the Director and supported by evidence).

#### **4. Ensure that the regulation requires an impermeable base (such as a liner) for all existing, modified, and new permanent manure storage.**

The AWCR Intentions Paper is clear that over vulnerable aquifers, permanent storage structures that are **new or modified** will be required to have an impermeable base and have a minimum of two metres vertical distance below the whole structure to the seasonal high water table. In addition, there are specific requirements for permanent liquid manure storage structures (including earthen storage). Further, the AWCR Intentions Paper states that the Ministry is proposing a new requirement for existing earthen storage for liquid manure over vulnerable aquifers: Within two years of a new revised regulation, the operator must have a qualified professional conduct an assessment to ensure the storage is not leaking. If the storage is leaking, the operator must put an impermeable base layer (or liner) in place.

This approach falls short of the POLIS Recommendations Report, as it only requires liners for new or modified permanent manure storage systems, not existing ones. The only apparent exception is for earthen storage for liquid manure over vulnerable aquifers. Existing facilities have contributed to the current problems in the Hullcar (and likely in many regions across the province). All storage systems should be equipped with appropriate impermeable liners to ensure protection of drinking water sources. Government must create a schedule to retrofit existing storage facilities with impermeable liners in *all* existing operations, not just future constructions. A reasonable timeline would be to require that all storage facilities over drinking water sources have impermeable bases installed in a five-year period.

### **General Comments**

#### *Linking the Regulation to Drinking Water Protection Plans*

We note on page 3 of the AWCR Intentions Paper under “General Considerations” that the links to existing legislation and regulations are noted; however, Drinking Water Protection Plans are not included. We believe Drinking Water Protection Plans should be explicitly included, as there may be some severe cases in which the Ministry of Health will be required to explicitly engage and trigger a Drinking Water Protection Plan when public health is at risk (such as in the Hullcar Valley).



### *Addressing Cumulative Impacts through Area Based Management Plans*

We believe, under the current regime, that Area Based Management Plans (ABMP, under the *Environmental Management Act*) are an important tool in addressing cumulative impacts and threats to source water associated with agricultural practices in high-risk areas. We anticipate the Hullcar region will be developing such an ABMP—with potential for the plan to be further developed into a Water Sustainability Plan under the *Water Sustainability Act*—and we are hopeful this will be a model for other regions facing similar challenges.

There is very limited discussion of ABMPs (or Water Sustainability Plans) in the AWCR Intentions Paper (other than the mention of ABMPs on page 12). We are concerned that the regulation will be silent on the need for plans and the ability to trigger them more easily as circumstances such as the Hullcar Valley present themselves. We recognize that the regulation intends to better trigger Nutrient Management Plans and Irrigation Management Plans, but these are primarily on-site (on-farm) planning tools. These site-specific plans would be best complemented by regional tools that can reinforce a broader outcomes-based approach and address the concerns related to cumulative impacts.

To address this, we suggest the regulation include the explicit ability for the Director (or identified water or advisory board) to recommend the development and application of an ABMP (under *the Environmental Management Act*) or a Water Sustainability Plan (under the *Water Sustainability Act*). This will enable a more integrated whole-of-system approach to nutrient management in areas where this is warranted.