



Lakeland Industry and Community Association

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Acid Deposition Monitoring Program Expansion Committee Meeting Minutes Thursday, October 21, 2021 1:00 p.m. – 3:00 p.m. LICA Boardroom and via Microsoft Teams

Present: Heather Harms
Desiree Parenteau
Salim Abboud
Amanda Avery-Bibo
Greg Wentworth
Brent McGarry
Clarence Makowecki
Wally Qiu
Jennifer O'Brien
Leo Paquin
Fin MacDermid
Andrea Woods
Lindsay Hollands (Arrived 1:33 p.m.)

Observers and Guests: Nikita Lattery

Staff and Contractors: Kristina Morris, LICA Executive Director
Michael Bisaga, Manager, Environmental Monitoring Programs
Eveline Hartog, LICA Administrative Professional
Tina Johnson, LICA Administrative Professional

Regrets: Sean Mercer
Larry Turchenek
Colin Cooke

1.0 **CALL TO ORDER**

Heather Harms Committee Chairperson, called the meeting to order at 1:01p.m.

1.1 Territorial Acknowledgement

1.2 Introductions

Greg Wentworth, the Committee member representing AEP, indicated that his last day at AEP would be November 12, 2021. The Committee was also notified that Colin Cooke from AEP currently does not have the time to serve on the Committee but would be available as a reference person.

1.3 Vision, Mission and Values

1.4 Roll Call

1.5 Approval of Agenda

#1 Moved by Desiree Parenteau AND CARRIED that the October 21, 2021, Agenda be approved as presented.

1.6 Approval of the Minutes

1.6.1 September 16, 2021

#2 Moved by Amanda Avery-Bibo AND CARRIED that the September 16, 2021, minutes be approved as presented.

2.0. ONGOING BUSINESS

2.1 Review of Post-Meeting Feedback and Requests For Additional Information

2.1.1 Objectives of Monitoring Program and Monitoring Sites

The Committee discussed what was required in terms of the ADMPEC committee objectives. The proposed objective of the monitoring program is:

"To develop, implement, and operate a long-term program to detect and characterize the effects of acidifying emissions on terrestrial and aquatic ecosystems, and traditional resources."

The scope of the monitoring program will entail wet and dry deposition monitoring, soil and vegetation monitoring and aquatic environment monitoring. This objective will be captured in phase one of the Plan.

The Committee inquired where the best sites for consideration for monitoring could be found and the Manager of Environmental Monitoring Programs indicated that best sites are determined by the modeling and expected emissions results. He also mentioned that LICA's current air monitoring program does cover some of the acid deposition objectives but not all.

#3 Moved by Heather Harms and CARRIED that the Committee adopt the proposed objective for the Acid Deposition Monitoring Program Plan.

2.1.2 Monitoring Agricultural Soils vs Forest Soils

The Manger of Environmental Monitoring Programs discussed the comparison of monitoring agricultural soils vs. forest soils, the latter of which would be preferred in terms of acidification monitoring. Critical loads of acidity on terrestrial ecosystems cannot be determined for agricultural soils due to inputs such as of fertilizer, manure, etc. Pristine sandy soils with jack pine stands are ideally suited for monitoring due to the decreased complexity between cause and effect in these ecosites as the contributing variables to determining the degree and rate of acidification are simplified.

Additionally, grazing lands are not typically considered in identifying acidifying effects on crop growth. Due to variability in agricultural practices from farm to farm, it is nearly impossible to differentiate acidification effects from those caused by agricultural modification of soils. The most accurate indication of soil acidification is therefore pristine soil sites that respond quickly to acid deposition, i.e., forest soils where the only influence is from atmospheric inputs. It was determined that LICA would be looking at these areas for the acid deposition monitoring program.

2.1.3 Clarify on Critical Loads and ADMF

Clarity on explaining critical loads came from the Alberta Acid Deposition Management Framework (ADMF) document. Critical load is a quantitative estimate of an exposure below which significant harmful effects do not occur. Critical loads differ from location to location; the risk of acidifying impacts from sulphur and nitrogen is looked at in relation to the critical loads at a specific location.

Monitoring focuses on areas where potential exceedances may or are predicted to occur. Critical loads for Alberta are presented as a grid on a map covering the entire province; critical load is based on acid sensitivity of soils, the water regime, plants, and other factors in each grid cell. Locations where there is a confluence of high deposition and low critical loads are the areas that LICA will likely identify as sites to monitor.

LICA's monitoring plan will be guided by the critical load maps and management framework outlined in Alberta Acid Deposition Management Framework.

2.1.4 Water Chemistry and Aquatic Ecosystems Monitoring From An Acid Deposition Perspective

The Program Manager indicated that the most recent research is the 2018 modeling study which suggests that acid buffering capacity within watersheds in the Fort McMurray area is insufficient; modelling suggests that exceedances may occur at current acid deposition rates. In general, we have a good understanding of the potential effects of acid deposition on soils in the LICA region but much less is known about lakes and aquatic systems (from an acid deposition and acid sensitivity perspective). The Committee will seek outside expertise and advice on monitoring the effects of acid deposition on surface water.

2.1.5 WBEA: Deposition Monitoring Program

The Program Manager presented the information from the Wood Buffalo Environmental Association regarding terrestrial effects of acid deposition; a project that was first established in 1995. The objective of the TEEM program is to monitor air related impacts on the ecosystem and to provide early detection of acid deposition effects, early enough to affect change on terrestrial areas.

The Committee was presented with a conceptual model diagram that helps describe WBEA's acid deposition monitoring program. LICA has equivalent components of this program in place, but some monitoring elements have not been implemented or considered. The Manger of Environmental Monitoring Programs felt it was worthwhile for the Committee to have a presentation from WBEA on this program and hear what their experience has been. Comparisons of methodologies could be presented to help LICA understand the value they would add to our program. Although the oil sands development in the Fort McMurray area differs from that of the LICA region, there is value in using similar monitoring methods and technologies.

2.2 Initial Results of GIS/Mapping Overlay

The Manager of Environmental Monitoring Programs presented slides of the Geographic Information System (GIS)/mapping overlay to the Committee. The maps were adapted from the recently released Alberta Monitoring, Evaluation and Reporting (MER) Framework to show the areas that are highly suited for deposition effects monitoring. The suitability for deposition monitoring was colour coded: red = low suitability; green = high suitability. A map which superimposed LICA's current monitoring program on the MER suitability classes for deposition monitoring was presented. It was indicated to the Committee that it would make sense for LICA to use the suitability classes in the MER to inform the expansion of LICA's deposition monitoring program. The atmospheric deposition map was informed by the GEN-MECH model.

2.3 Identification of Potential Monitoring Areas

The Manager of Environmental Monitoring Programs requested that information from LICA be included in the next modeling run.

3.0 OTHER BUSINESS

3.1 Update on GEM-MACH Modelling Outputs

The Committee was informed that we are currently using the 2013 emissions information but from August 2018 to October 2021 a new run of model concentrations and deposition rates would be available and would help determine the areas that LICA should focus on. This new modeling should be ready in December 2021.

It was inquired if LICA should delay our monitoring program to include the new GEN_MECH information but the Committee agreed it is best not to wait on these deliverables. The Manager of Environmental Monitoring Programs agreed, and if this is the gold standard there is other information, we can use that is also current.

4.0 ACTION LIST

4.1 Follow-up On Action List

4.1.1 September 16, 2021

The Committee identified some items to be added from the September 16th Action List:

- Add oil sand leases to the critical load map under Item 3.2.1
- Priority lakes under 3.3.1 should merge with LICA's Integrated Watershed Management Plan

5.0 UPCOMING MEETING DATES

5.1 Board Meeting – November 25, 2021

5.2 Next ADMPEC Meeting

The Manager of Environmental Monitoring Programs would like to have a presentation by either Wood Buffalo Environmental Association or ECCC given to the Committee on acid deposition monitoring; consequently, the next meeting date will be determined once a presenter and their availability is determined. The Committee will be informed of the next meeting dates choices via email and Doodle Poll.

The Executive Director indicated that if the monitoring plan decision is to be made in December, it will need to be included in the Board of Directors meeting agenda for December 16th, otherwise a motion may be requested via email.

6.0 ADJOURNMENT

Meeting adjourned at 3:04 p.m.

#4 Moved by Amanda Avery-Bibo AND CARRIED that the meeting be adjourned.

Approved on: _____
Date

Signature