ALBERTA INNOVATES

AGRICULTURE & ENVIRONMENT

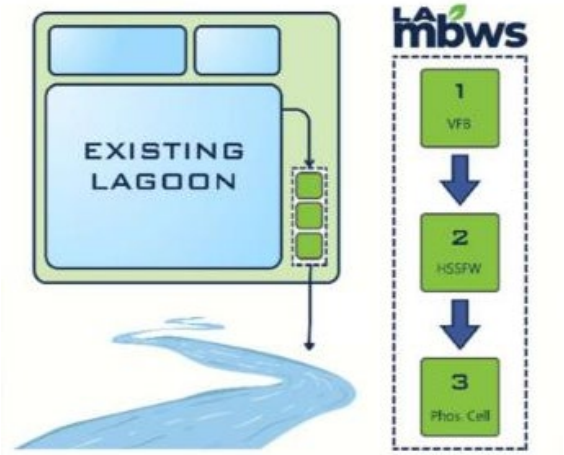
ENVIRONMENTAL INNOVATION

WATER INNOVATION PROGRAM

FUNDING DETAILS

Lagoon Augmentation Technology for Source Water Protection

MAGNA is developing a refined version of their original MBWS product, that would be specifically tailored towards lagoon augmentation and named the Lagoon Augmentation - MAGNA Biofilter Wetland System (LA-MBWS). This new technology targets the treatment elements lagoons fall short on such as pathogens, ammonia, Nitrogen, and Phosphorus. This technology will be streamlined for a 90 day concept-design-construction-commissioning cycle. Communities need fast, cost-effective, easy-to-operate solutions to ensure they can survive the 2024 drought, however, this will also serve to support future drought and discharge concerns for all Alberta and Western Canadian communities.



LA-MBWS Concept

RECIPIENT:
MAGNA Engineering Services Ltd.

PARTNERS:
Natural Products Canada, IRAP, IISD

TOTAL BUDGET:
$1,300,000

AI FUNDING:
$500,000

PROJECT DATES:
JUN 2024 – OCT 2027

PROJECT TRL:
Start: 4
End: 9

APPLICATION

The application is initially targeted to rural and indigenous communities across Alberta and will expand during full commercialization across Western Canada and beyond. The project will provide a solution for these communities to convert their lagoon effluent from a low-quality waste product to highly treated source water for irrigation, other water re-use opportunities, or healthy discharge to sensitive receiving environments.

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PROJECT GOALS

The main objective of this project is to design, build, and operate 1-2 commercial scale Lagoon Augmentation - MAGNA Biofilter Wetland System facilities in Alberta communities. The number of installations will depend on the number of communities selected and the sizing/budget for their wastewater facility upgrades. These facilities will allow these communities to enhance effluent treatment in order to release to low-flow receiving environment's due to the impacts of Alberta's 2024 drought.

BENEFITS TO ALBERTA

- Reduced capital and operating costs for small municipalities compared to the implementation of mechanical treatment plant.
- Potential to increase capacity of a lagoon if able to move to continuous discharge.
- Improved quality of discharge from municipal wastewater lagoons and associated reduction in impacts to the receiving aquatic ecosystems. The addition of the LA-MBWS would reduce pathogens, ammonia, nitrogen, and phosphorus levels in the effluent water.
- Supports communities in meeting discharge requirements during low stream flow events (e.g. during drought years).
- Could enable reuse applications for long-term flood and drought resiliency.

1 New Product/Service

100% Increase in Ability to Reuse Lagoon Effluent

CURRENT STATUS

SEP 2024

The project has recently kicked-off.