

BOW RIVER

PHOSPHORUS MANAGEMENT PLAN

2015 IMPLEMENTATION SUMMARY REPORT



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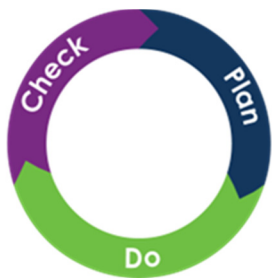
The Bow River Basin Phosphorus Management Plan (PMP) was released in April 2014 and officially endorsed by all participating agencies in February 2015. To obtain a full copy of the PMP, please visit www.esrd.alberta.ca (and search Bow River Phosphorus Management Plan).

INTRODUCTION

The importance of implementation cannot be overstated. Because implementation typically involves a number of implementers and is carried out in stages or according to different timelines, an implementation workplan is instrumental to managing and coordinating activities. Development of the implementation workplan involves identifying the sequence of tasks to be done; who will do them and by when; possible funding and technical support; and setting up a process to measure implementation progress by the proposed implementers. In essence, the implementation workplan is a guide for turning recommended management actions from paper to reality and for determining how best to measure implementation progress toward meeting the plan's desired outcomes. The implementation workplan is a living document which is continually updated as progress towards the plan's outcomes is achieved

IMPLEMENTATION WORKPLAN DEVELOPMENT

Although it will be up to the implementers to move the majority of the actions forward, the implementation committee can play a substantial role in implementation by preparing an implementation workplan, providing additional information or support to implementers, implementing partnership-specific recommendations, tracking the overall progress of implementation, and providing coordination and leadership for the implementation process.



PMP IMPLEMENTATION COMMITTEE (IC) MEMBERS

Establishing an implementation committee to direct the implementation of the plan was an essential first step to move the plan from paper to action. Given their detailed knowledge of the plan and how it was developed, original steering committee members were asked to participate on the implementation committee. In addition, the IC sought new implementation committee members with the skills, energy, enthusiasm, and connections to move implementation forward. A list of PMP IC members are provided below.

OUTCOMES AND OBJECTIVES

“Phosphorus inputs to the Bow River are managed to provide a healthy aquatic ecosystem while meeting the needs of stakeholders.”

The primary objective is to help manage current water quality conditions in the Bow River through control of phosphorus inputs. Secondary objectives include:

- Improve understanding and change behavior to reduce phosphorus entering the Bow River;
- Increase knowledge about phosphorus sources, the planning area, and phosphorus management practices;
- Reduce additions of phosphorus;
- Reduce the movement of phosphorus to the river;
- Remove excess phosphorus from water before it reaches the river.

Photo: Left to Right:

Jesse Parker, Scott Fediow, Ron Axelson, Tracy Scott, Lily Ma, Leta van Duin, Shannon Abbott, Stefan Kunz, Elaine Bellamy, Rob Wolfe, Sharon McKinnon, Jerry Brunen, Irene Soloway, Wade Bell, Medini Prasai, Dave Churchill, Michele Habrylo, Kelsey Wood

Missing: Shirley Pickering, Sarah Schumacher, Kelly Learned, Tim Dietzler, Hugh Pettigrew, Erwin Braun, Gerry Guy, Angus Chu, Steph Neufeld, Janna Casson, Quincy Brown, Trevor Wallace, Richard Phillips, Milana Simikian, Jeff Porter, Brent Leinan, Brian Hills, Courtney Scott, Deanne Newkirk, Margaret Beeston, and Chelsi Menyes.



TRACKING PROGRESS

The PMP Implementation Committee has discussed the following 19 actions to date. A summary of the progress to date is included below.

ACTION	PROGRESS	SUSTAINABLE PROGRESS	COMPLETED OR NEARING COMPLETION
Establish a PMP Education and Outreach Working Group...			
Support stormwater practitioners with education, tools and training...			
Share innovative solutions & BMP among wastewater treatment staff...			
Develop policy to distribute load allocations...			
Continue to monitor water quality at LTRN and City of Calgary sites...			
Conduct water quality sampling at tributaries such as Sheep....			
Conduct water quality sampling in irrigation district supply & return flows			
Implement appropriate stormwater monitoring...			
Initiate a small watersheds critical source areas project...			
Complete accurate inventory and health assessments...			
Update mapping of Canada Farm Census and GF2 programs...			
Evaluate urban & rural stormwater management practices...			
Remove regulatory barriers to the innovative use of BMPs...			
Develop risk assessment tools/programs for livestock...			
Initiate pilot projects to remove phosphorus from lagoons....			
Establish & enforce runoff volume targets for development....			
Examine new strategies to remove phosphorus from wastewater....			
Review codes of practice for lagoons....			
Have lagoon operators determine optimal release timing...			

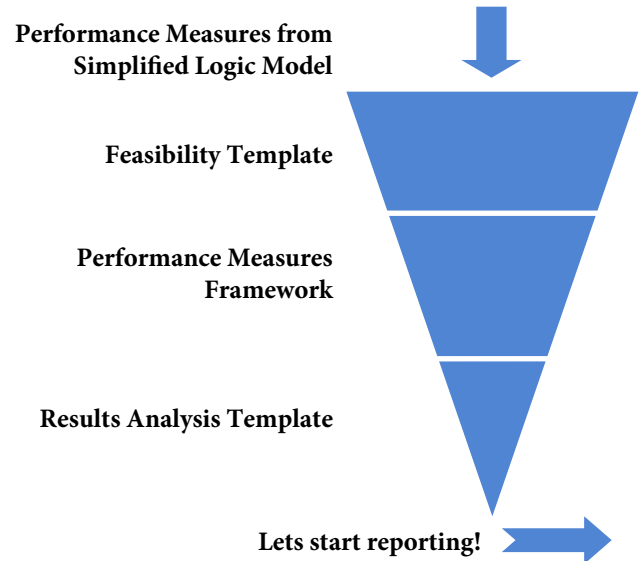
¹ Sustainable progress refers to actions that have a clearly established process to move forward and are expected to be completed within the next year or two.

² Nearing completion refers to actions that should be completed in the next few months.

PERFORMANCE MEASURES WORKING GROUP HIGHLIGHTS

Over the course of the past year, the Performance Measures Working Group established a process to identify relevant indicators to measure the success of the PMP. To help guide their work, the following tools are being used:

- ▶ **SIMPLIFIED LOGIC MODEL**
organizes the outcomes, objectives, strategies and actions to help establish potentially relevant indicators.
- ▶ **FEASIBILITY TEMPLATE**
assists in the determination of indicator relevance and whether the proposed indicators should be pursued further.
- ▶ **PERFORMANCE MEASURES FRAMEWORK**
enables working group to think through data collection, storage and analysis to ensure reporting is achievable and to help ensure consistency in calculations and analysis.



To date, feasibility templates have been completed for water quality, irrigation district best management practices, and the effective implementation of wetland and riparian policies.

EDUCATION AND OUTREACH WORKING GROUP HIGHLIGHTS



Over the course of the past year, the Education and Outreach Working Group established a process outlining how to create greater awareness for the Bow River Phosphorus Management Plan. Presentations were developed and delivered to a wide variety of audiences. A Strategic Communication and Engagement Plan was developed to track what form of communication has taken place (e.g., presentations, etc.), what questions were asked and what responses were given while documenting numbers of people in the audiences for evaluation purposes. Additional successes (completed or in progress) include public display materials, a new logo, an informative short video, an awareness survey, a presentation evaluation, an updated website and coordination of the Stakeholder Advisory Group workshop.



ACTIVE PROJECTS LINKED TO THE PHOSPHORUS MANAGEMENT PLAN

Advancing Canadian Wastewater Assets Facility

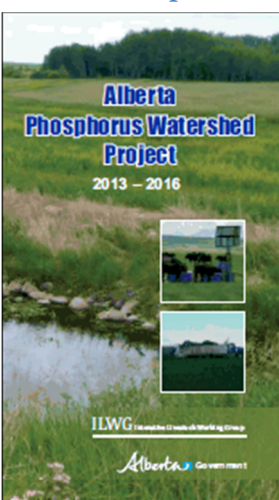
For the first time, university researchers are working side-by-side with municipal operators to advance wastewater treatment technologies and knowledge that will lead to cleaner water, a better protected ecosystem and improved public health. On March 17, 2015, the University of Calgary and The City of Calgary unveiled the \$38.5 million Advancing Canadian Wastewater Assets (ACWA) facility at the Pine Creek Wastewater Treatment Plant. An idea conceived more than 15 years ago through the vision of a group of world-class scholars, ACWA is the only fully integrated, fully contained university research facility located within an operating industrial wastewater treatment plant in the world.



Agriculture and Flood Integrated Programs

Alberta Alberta Environment and Sustainable Resource Development is partnering with Alberta Agriculture and Rural Development on the development and delivery of a joint program to support Growing Forward 2 and the Alberta Flood recovery. The two programs (Agricultural Watershed Enhancement Program and Watershed Resiliency and Restoration Program) are working to coordinate activities and actions regarding wetlands and riparian areas.

Alberta Phosphorus Sub-Basin Project



Alberta Agriculture and Rural Development and the Intensive Livestock Working Group have initiated a three-year watershed study to develop and test a phosphorus risk management tool. The Alberta Phosphorus Management Tool will provide producers with Best Management Practices (BMP) suggestions to reduce nutrient loss from their farms. The tool will be used to assess the risk of phosphorus loss and prioritize BMPs on environmental effectiveness and cost. This will provide options

to get the best value. The objectives of the project are to 1) develop and evaluate the Alberta Phosphorus Management Tool, 2) implement as many best management practices as possible in two agricultural watersheds using the risk-based Alberta Phosphorus Management Tool and 3)

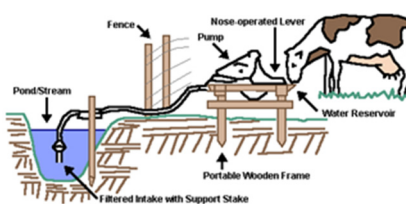
evaluate the cumulative effects of implemented BMPs on reducing phosphorus losses from two agricultural watersheds.

Alberta Wetland Policy

The Alberta Wetland Policy is currently being implemented in the province's White Area. From September 2014 to May 2015, ESRD will introduce a series of directives, guides, and tools that will enable White Area implementation. This approach will permit Albertans to begin preliminary application of the tools and systems enabled under the new policy, and to assess how the new policy will affect their respective activities. As of June 1st, 2015, proponents will be expected to submit wetland related Water Act applications in accordance with new requirements established under the Alberta Wetland Policy.



Best Management Practices (BMP)



Rocky View County, Wheatland County and the County of Foothills individually and in partnership with Alberta Agriculture and Rural Development and its

stakeholders, will provide educational and BMP implementation information and technical support to agricultural producers in the study area. Rural education programs include:

- Ecosystem service values for riparian areas, wetlands.
- Value and benefits of 4-R nutrient stewardship (Right fertilizer source at the Right rate, at the Right time and in the Right place)
- Septic system management and risks.
- Responsible recreation.
- Livestock grazing and watering management practices.
- Manure and sludge application practices to reduce P loss in runoff.

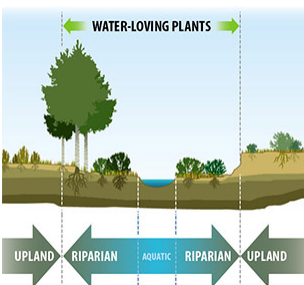
Bioretention Research



The Alberta Low Impact Development Partnership (ALIDP) Research Roundtable in March 2015 kick-started a new round of dialog on bioretention research needs in Alberta and was attended by 24 participants from University of Alberta, University of Minnesota, City of Calgary, City of Edmonton, Rocky View County, Toronto and Region Conservation Authority, and private industry (made up primarily of consulting engineers and landscape

architects). Bioretention means to retain pollutants using living processes and components, and is part of an overall treatment-train approach to improving stormwater quality. Optimization of bioretention for the removal of nutrients, especially phosphorus, is an extremely challenging problem which requires local research to address our particular pH, soil, climate, and vegetation variables. The ALIDP has been working since 2011 with industry, academia, and municipalities on bioretention design, most recently under the banner of the City of Calgary Module 2 Design Guidelines. The University of Alberta has undertaken column studies on behalf of the City of Edmonton, and the Town of Okotoks is planning field-scale trials using parking-lot runoff.

City of Calgary Riparian Strategy



The City of Calgary has completed a Riparian Strategy that included initial stakeholder engagement, and has been endorsed by Council committee. A Riparian Implementation Plan is underway, and includes four program areas: (i) Riparian Health Restoration, (ii) Riparian Land

Use Planning, (iii) Riparian Communications, and (iv) Riparian Triple Bottom Line Valuation. Performance indicators and targets, actions and priorities, draft policies and procedures, and additional stakeholder engagement will be part of the implementation plan process for riparian areas.

Continuing Education Program

Ducks Unlimited Canada plans to operationalize its continuing education program sometime this year. To date, it has completed a pilot project (“Decision Making for Wetlands Management”) in collaboration with three post-secondary institutions and two industry associations.



Cooperative Stormwater Management Initiative

The Cooperative Stormwater Management Initiative (CSMI) was formed to assist municipalities and Western Irrigation District (WID) to find an effective and feasible solution to stormwater. CSMI is comprised of the: Calgary Regional Partnership (CRP), Town of Chestermere, Rocky View County, Town of Strathmore, City of Calgary, Wheatland County and Western Irrigation District. One of the objectives is to develop a Stormwater Management solution that will meet water quality objectives for storm water

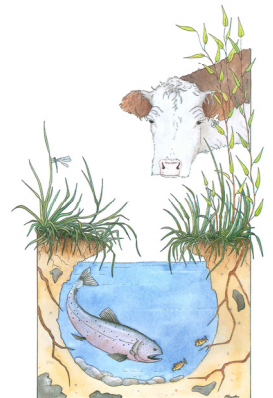


runoff and provide capacity for the projected storm water discharge. Stormwater runoff with the region flows naturally towards the irrigation canal distribution system. Control of the nutrient loadings from planned and existing urban land development has proven to be a challenge. Stormwater runoff from rural areas also contributes to nutrient loading into receiving water bodies. High nutrient loads are a concern for receiving water bodies (natural and irrigation distribution systems). The impact of water quality affects the operation of the irrigation distribution system. The aim of CSMI is to develop “Sustainable Stormwater Management Options” for the region that is designed to meet the needs of both municipal and irrigation sectors.

Cows and Fish

Alberta Riparian Habitat Management Society

Cows and Fish are completing riparian area assessments, education sessions, training and information packaging on riparian health and agriculture livestock management. In partnership with the Alberta Woodlot Extension Society, Cows and Fish is working with landowners to plant trees and shrubs along streams and rivers in the upper Bow Basin in agricultural settings, predominantly livestock grazing areas. Through federal and provincial granting initiatives, projects are being undertaken to restore stream banks, particularly in important trout headwater streams, using willow and tree planting, bioengineering techniques and installing bridges. Cows and Fish is working with local watershed groups such as the Ghost Watershed Alliance Society and the Elbow River Watershed Partnership to complete these projects.



Design Guidelines for Erosion and Flood Control for Streambank and Riparian Stability

The City of Calgary has completed Design Guidelines for Erosion and Flood Control for Streambank and Riparian Stability Restoration. This document contains bioengineering and riparian restoration design guidelines, and is currently being promoted and used by The City of Calgary for the analysis, design, tendering and construction of erosion control, slope stability, and restoration for streambank and riparian areas. ALIDP has delivered courses for the past two years to help roll out these guidelines and to discuss lessons learned from Calgary's experiences with stream bioengineering techniques.

Ducks Unlimited Canada Phosphorus and Nutrient Research Project



Ducks Unlimited Canada
Conserving Canada's Wetlands

Ducks Unlimited Canada has launched a 3-year research project in the Camrose Creek sub-watershed that will look at the effects that wetland drainage has on

the volumes of nutrient and phosphorous export as well as annual and peak streamflow levels within the watershed. Similar to its sister projects in Broughton Creek, Manitoba and Smith Creek, Saskatchewan, this project will result in comprehensive analysis of the costs and benefits related to land conversion and its impacts on wetland ecological goods and services.

Enhanced Alignment of Water Quality Monitoring Programs

Alberta Environment and Sustainable Resource Development is working with the City of Calgary to discuss enhanced alignment of their respective water quality monitoring programs. This will include discussions on

- 1) how data is collected and interpreted,
- 2) The location of monitoring sites, and
- 3) Other related topics.

Erosion and Sediment Control Guidelines and Plans

Rocky View County has erosion and sediment guidelines that require developers to prepare and implement a Construction Management Plan for large/significant developments/subdivisions; the plan includes erosion and sediment control. Similarly, the City of Calgary requires Erosion and Sediment Control Plans for development and conducts ESC monitoring.

Erosion and Sediment Control Training

The Alberta Low Impact Development Partnership offers certification in design (Certified Professional in Erosion and Sediment Control) and inspection (Certified Inspector in Sediment and Erosion Control) in late winter/early spring each year.

Floating Treatment Wetlands

Alberta Environment and Sustainable Resource Development, the University of Calgary, Wheatland County, and Source 2 Source are coordinating a pilot study to investigate the potential for wastewater treatment using Floating Treatment Wetlands at the Hamlet of Carseland wastewater lagoons. The study will use native wetland species grown on floating mats to

remove contaminants from wastewater before they can reach the Bow River over a 2 year period



Alberta Environment and Sustainable Resource Development

spanning 2014-2016. The majority of funds are awarded through Environment Canada's Lake Winnipeg Basin Stewardship Fund while additional support and materials are provided by Vita Water Technologies, Knutson and Shaw Growers and the Natural Sciences and Engineering Research Council of Canada. Alberta Agriculture and Rural Development is also continuing with the second year of an applied research project on floating treatment wetlands in Vegreville and Ft. Vermilion.

Hydrologically Significant Areas Workshops



Council

As part of the Bow Basin Watershed Management Plan implementation, the Bow River Basin Council will host and facilitate two preliminary workshops with key stakeholders to conduct an overall needs assessment and identify key gaps in spatial information. These workshops are scheduled for May 2015. Information compiled in these two workshops will feed into the overall development of the South Saskatchewan

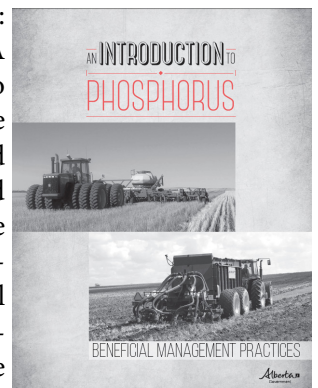
Regional Plan project deliverables to be developed in fiscal 2015/16

Information Sharing

The Bow River Basin Council focussed a substantial portion of the March 11, 2015 BRBC Quarterly Education and Networking Forum on stormwater management. Presentations included: 1) Nose Creek Stormwater Quality Sampling Program and BMP Identification, 2) Stormwater Management and Low Impact Development Overview, 3) Stormwater Loadings from Small Urban Centres in the Oldman River Basin, 4) Town of Okotoks Stormwater Monitoring Programs and 5) City of Calgary Total Loading Management Plan and Bow River Water Quality Model. The March 11 Forum also highlighted emerging regional storm water management issues and initiatives being undertaken.

Introduction to Phosphorus

Alberta Agriculture and Rural Development (ARD) has developed a factsheet for producers titled "An Introduction to Phosphorus: Beneficial Management Practices". A technical compendium will also be posted on the ARD website that provides more detailed information on Phosphorus and its impacts. This work was the direct result of ARD's involvement with the PMP. ARD will continue to work with stakeholders, such as the Intensive



Livestock Working Group, to evaluate and develop beneficial management practices, develop information material and risk assessment tools to assist producers in making production and management decisions that minimize environmental impacts. ARD will be highlighting this publication along with many other tools through extension activities.

In-Vessel Bio-Solids Composting



A centerpiece of Okotoks' sustainable development initiative has been the conversion/expansion of its wastewater system into an Integrated Waste Water Treatment Plant (WWTP) that processes sewage into compost, with the help of a local composting facility. As the first municipality in Canada to generate compost from sewage, the \$3.7 municipally-funded construction project (completed 2004) represents a revolution in thinking about wastewater treatment - a move from the existing paradigm of "waste disposal" landfilling and land spreading sludge to "resources recovery" and zero impact - with a composted product that is in demand and for sale. Removal of solids from the front end of the treatment process allow for greater efficiency in treatment of liquids, discharging effluent that meets or exceeds upstream water quality standards and contributing to maintaining and enhancing the aquatic health of the Sheep River.

Land and Stewardship Conservation



**Western Sky
Land Trust**

Conserving Our Sense of Place

In partnership with several organizations, Western Sky Land Trust is currently undertaking an intensive landowner outreach program called the Bow and Beyond. It is modeled after Phase One, a similar, successful program completed along the Bow River downstream of Calgary to Siksika First Nation. In addition, a Geographic Information System (GIS) data collection and mapping project by the Southern Alberta Institute of Technology (SAIT) has been completed for the Bow and Elbow river valleys upstream of Calgary to the eastern slopes as well as the Highwood and Sheep rivers. This mapping is allowing Western Sky to prioritize and target land parcels along these rivers for direct face to face contacts with the property owners. These contacts are underway and the goals are to: 1) gain an understanding of the biophysical features and land use of the properties and the owners' attitudes and views about conservation; 2) provide stewardship and technical information; and most importantly, 3) to explore opportunities to improve, protect and restore riverine features including riparian areas, escarpments, and floodplains. The outcomes of the Bow & Beyond outreach will be shared in a summary report and conservation projects will be undertaken with interested landowners.

Load Allocation Policies

Alberta Environment and Sustainable Resource Development established a project team to develop policy to manage cumulative pollutant loads to waterbodies at watershed/ sub-watershed / site - specific level. Policy will be implemented through regional/ sub-regional planning initiatives and policy outcomes will be achieved through a complementary package of regulatory and non-regulatory instruments.



Low Impact Development Training Workshops

The Alberta Low Impact Development Partnership identifies and delivers stormwater training and undertakes other activities to strengthen professional competence and understanding within and between disciplines and jurisdictions in Alberta.



Mapping

Alberta Agriculture and Rural Development (ARD) is currently updating the Agricultural land use maps for the Bears paw-Bassano Bow River reach with the updated 2011 census data. The maps were originally created to help the PMP development committee understand or characterize the agricultural land use in the reach. These maps can be used to direct or target programs and information within the reach. In addition, ARD will be mapping out best management practices (BMPs) practice changes for the reach based on both the Growing Forward 1 and Growing Forward 2 BMP adoption funding programs. It is anticipated that work on the GF2 maps will commence in April 2015.

Monitoring Urban Water Quality

The City of Calgary has been monitoring water quality at monitoring sites along the Bow River and at City's stormwater system to report total loadings of total phosphorus and total suspended solids to Alberta Environment and Sustainable Resource Development annually.

The total loading monitoring program has been evaluated and enhanced constantly through City's Total Loading Management Plan.



**THE CITY OF
CALGARY**

Nutrient Beneficial Management Practices

Evaluation Project

Started in 2006 by Alberta Agriculture and Rural Development - the Nutrient Beneficial Management Practices (BMPs) Evaluation project final report (with summary and recommendations) is scheduled to be available in the fall of 2015. Two agricultural watersheds (Indianfarm and Whelp Creeks) and two heavily manured irrigated fields were monitored from 2007 until 2012. The main objectives



of this study were to: 1) evaluate the effectiveness of nutrient BMPs in reducing agricultural impacts on the environment at the farm scale, 2) assess the impacts of selected BMPs on water quality in specific reaches of the watershed streams, 3) predict the cumulative impacts of selected BMPs on overall water quality using models, 4) evaluate nutrient BMPs for effective use of manure in crop production, and 5) assess economic costs and benefits associated with the individual BMPs implemented in this study.

Provincial Water Quality Monitoring

The Alberta Environmental Monitoring, Evaluation and Reporting Agency monitors monthly water quality at Long-Term River Network stations. The South Saskatchewan Region Water Quality Management Framework also mandates the annual review and assessment of water quality data to determine ambient water quality at the South Saskatchewan Region Long-Term River Network stations.



Rainwater Barrels



The Town of Strathmore has made it compulsory to install rainwater barrels for all new developments and provides rain barrels to residents at or below cost for installation

Rainwater Harvesting

The Government of Alberta has developed Rainwater Harvesting Guidelines for residential use. The guidelines are recommended for the safe design, construction and maintenance of residential rainwater harvesting systems.



Research Involvement

The University of Calgary disseminates research results to practitioners through workshops, Bow River Basin Council yearly science forums, and seminars by invitation. The University of Calgary is also an active participant in the floating treatment wetlands project at the Hamlet of Carseland wastewater lagoons.

Research Opportunities

The Phosphorus Management Plan Implementation Committee compiled a list of 36 researchers working on nutrient management issues and contacted these researchers to 1) track existing progress on identified research objectives, 2) promote the potential for future

research in the identified topic areas and 3) promote the work of the PMP

Riparian Absorptive Landscape Pilot Study

The Bow River Basin Council (BRBC) has initiated a Riparian Absorptive Landscape Pilot study for the Town of Okotoks existing public works yard and wastewater treatment plan immediately adjacent to the Sheep River. The BRBC will partner with Town of Okotoks and other stakeholders to implement the study. The intent of this project is to utilize the biogeochemical functionality of plants and permeable soils to establish self-sustaining riparian bio-retention systems that would prevent storm water run-off nutrients and contaminants from discharging into water bodies. Structured soil beds combined with dense phreatophytic vegetation will be employed to maximize nutrient capture and replicate natural water balance as affecting the receiving stream environment.



Septic Sense Workshops



Wheatland County hosted a workshop to help rural property owners better understand and care for their septic systems. Presenters will teach you how to understand, assess and properly manage your septic system, enabling you to protect your investment in your property and the valuable natural assets associated with your land.

Storm Ponds and Live Liquid Micro-Organisms

The City of Airdrie is currently treating selected storm ponds with live liquid micro-organisms (LLMOs) to reduce algae growth and improve water quality, clarity and smell. Airdrie currently treats six ponds but are looking to increase that number to nine ponds later this year. The City of Airdrie is also planning to install a floating wetland treatment island as a trial project in one of the ponds this summer.

Stormwater Re-Use

The City of Calgary is currently developing a stormwater reuse strategy.

Stormwater Targets

The City of Calgary has developed interim stormwater quantity and quality targets for watersheds with Calgary, and is in the process of refining the stormwater targets to align with the City of Calgary's total loading objectives

Street to Stream Workshops



In early 2015, Cows & Fish and the Alberta Low Impact Development Partnership held five afternoon workshops entitled "From Street to Stream". These workshops explored the relationship between upland urbanization and consequences for our water bodies. Key messages included the need for stormwater volume-control and treatment to protect wetlands, lakes and riparian areas; a multi-zone riparian setback approach; and good news from around the province where progressive solutions have been implemented. Workshops were held in Calgary, Red Deer, Edmonton, Wetaskiwin and Lethbridge and are part of a larger project including BMP videos, digital stories, and a stewardship demonstration project. Cows and Fish and the Alberta Low Impact Development Partnership are now seeking a demonstration project location where riparian enhancement and / or low impact development techniques can be applied. The collaborative demonstration activity will take place in May 2015 as a hands-on learning follow-up to the Street to Stream workshops. The preferred option is a residential property along a river, stream or lakefront in the Bow, Red Deer or Oldman River Watersheds with a keen and interested landowner, but other locations will also be considered.

The Environmental Farm Plan

The Environmental Farm Plan (EFP) program assists farmers to complete risk assessments of their operation and management practices. The program is supported by Alberta Agriculture and Rural Development (ARD) and the Applied Research and Extension Council of Alberta (ARECA). The program is delivered by ARD and rural extension staff, who are either associated with the Counties, forage or applied research organizations working in the area. Alberta's Growing Forward (GF) program requires farmers to complete an EFP assessment in order to access financial support through the GF program.



Watershed Resiliency and Restoration Program (WRRP)

Ducks Unlimited Canada's wetland restoration project proposal has been approved for a grant under the Government of Alberta's WRRP, which aims to protect communities from floods and drought by improving natural watershed functions. The funding will enable Ducks Unlimited Canada to restore an additional 558 hectares of wetland in Alberta. Most of the restoration work will take place across the Bow River Basin and the Red Deer River watershed over the next several years.

Wastewater Treatment Technology

The main objective of the Natural Sciences and Engineering Research Council of Canada and City of Calgary Industrial Research Chair in Advanced Technology for Wastewater Treatment is the development of advanced technologies for the treatment and removal of nutrients and emerging substances of concern (e.g., pharmaceuticals, personal care products, animal antibiotics, pesticides from municipal wastewaters, etc.). The five-year research proposal includes three major research programs for the development and application of advanced wastewater treatment technologies: aerobic granulation; advanced oxidation processes; and biological nutrient removal technologies. The research studies will be conducted using actual wastewaters and at the full-scale Advancing Canadian Wastewater Assets facilities of The City of Calgary and the University of Calgary.

Wetland Restoration & Phosphorus Research Pilot Project



A Wetland Restoration Research Pilot Project is currently underway in Rocky View County. The Alberta Land Institute is partnering with the provincial government, the City of Calgary, Rocky View County and Ducks Unlimited Canada on its "Alberta's Living Laboratory - Wetlands Project" to undertake research and wetland restoration in the Nose Creek watershed. The research component will develop a model to estimate the effectiveness of wetlands in managing phosphorus. This is a five-year project to ultimately restore a significant number of wetlands in the Nose and West Nose creek watershed.

Yellow Fish Road Program

Yellow Fish Road is Trout Unlimited Canada's education program addressing the prevention of all stormwater pollution. The program links learning to action and is delivered to youth in schools, community groups and day camps within the Bow River Watershed. Youth discover stormdrains are the doorways to our rivers and that preventing pollutants such as phosphorus from entering our stormdrains is critical to maintaining and improving water quality. The program teaches youth that we can protect our waters and ensure "Rainwater Only" goes to our rivers through simple actions like, taking your car to the car wash, slowing the flow of water (using rain barrels), settling and filtering water (diverse plantings of native plants) and using natural alternatives.

