



**Pigeon Lake Watershed Association
Implementing the Pigeon Lake Watershed Management Plan**

2021 Action Plan



2021 at a Glance

2021 PROJECT / GOALS				
	Land	Shoreline	Water	Working Together
Community Action Advocacy & Education	Caring for the Lake Together: Phase II Community Integration			
	Residential Assessments for Shoreline Restoration, Riparian Health & Clean Runoff			Welcome to the Lake Program <small>(AREF)</small>
	Mulhurst - Swale & Naturalization Demo Site	Clean Runoff & Riparian Health Demonstration Sites Outreach & Maintenance		
	TWIGS <small>Youth Environmental Leaders at Pigeon Lake</small>	Great Canadian Shoreline Cleanup	Boat Refueling Stewardship	Watershed 101 / Leader Session
	Noxious Weeds: Prevent the Spread		Aquatic Invasive Species Boater Survey	Advocacy Watercraft Inspection Stations
	Technical Science & Monitoring			AIS LakeWatch Mussel Monitoring
			LakeWatch Water Quality Monitoring ALMS	
			eDNA Sampling - AHS, ALMS, PLWA	
			Nutrient Loading Outflows	
			Nutrient Release Sediment Analysis	
Policy Statutory Planning & Bylaws	Land Use Bylaws - Implementation Guide & Adoption, Consultant: MPS, Funding ACP			
	Municipal Drainage Guide, Consultant: ALIDP			
	Residential Construction Checklist - Integration			
Legend:	Core Projects	Pending Funding	Unfunded	Project Funded Secured

1.0 Introduction

The purpose of the document is to summarize implementation priorities for the Pigeon Lake Watershed Management Plan (the Plan). The document provides a reference point for evaluating program results and for communicating priorities and accomplishments to supporters, stakeholders and the general community. Program funding comes primarily from municipalities, donors and grants as outlined. Municipal financial support of the PLWA and its Executive Director is critical to Plan implementation.

This summary was produced in light of continued COVID-19, pandemic response measures. Caring for the Lake Together is the focus of 2021. PLWA will promote the use of the new stewardship repository created in 2020. Our goal is to help property owners implement beneficial management practices for the health of Pigeon Lake and its watershed.

2.0 Role and Relationships in Moving Forward Plan Recommendations

The Pigeon Lake Watershed Management Plan has seven major objectives and 49 actionable recommendations. Municipalities, senior government, the PLWA and the Steering Committee for the Plan have assigned roles in implementation of the Plan.

- **PLWMP Steering Committee:** multi-stakeholder representation by the PLWA, municipalities, Alberta Environment and Parks, Healthy Lake Partners, Chamber of Commerce and Maskwachis Cree. The committee reports to the Alliance of Pigeon Lake Municipalities and PLWA Board of Directors. Committee costs are underwritten by the PLWA and much of the day to day committee work is undertaken by the PLWA Executive Director. With respect to Plan implementation, the Steering committee is responsible for:
 - Directing technical recommendations e.g. Municipal Drainage Guide, Land Use Bylaw Guide
 - Advocating for science and monitoring to address knowledge gaps
 - Vetting, commenting, and monitoring outcomes including Stewardship Action Plan components by the PLWA
 - Reporting to the APLM and PLWA Boards
- **Pigeon Lake Watershed Association:** the PLWA and its Executive Director have several roles relative to the implementation of the Plan, some of which include:
 - Implementing the community action, stewardship components of the Plan
 - Providing leadership and resources (including sourcing funds)
 - Maintaining a network of experts, healthy-lake champions, and volunteers
 - Managing programming to support Steering Committee, working groups and the Science Committee.
 - Fund Development and grant writing to support specific Plan components.
 - Provide supporting resources and delivery for components of the Plan funded by the ACP Grant
- **Municipalities and the Alliance of Pigeon Lake Municipalities:** Responsibilities of municipalities relative to the PLWMP include:

- Considering Plan recommendations and subsequent guidance documents in the development of Statutory Plans (IDP, MDP and Land Use Bylaws and policies) and in municipal operations.
- Assessing technical options for in lake interventions
- Working together with and support for the PLWA and PLWM Steering Committee in moving forward with Plan Implementation.

Implementation of the plan will take several years and significant fiscal resources. Municipal Support of the PLWA and the PLWA Executive Director will be essential in moving the plan forward.

3.0 Vision Statement

Improved watershed natural environment and water quality

4.0 Mission Statement

To initiate and promote action-oriented watershed policies and best practices that support the long-term health, protection and restoration of the watershed.

5.0 Priorities

Priorities are set out in the Plan and implemented with guidance from the Pigeon Lake Watershed Management Plan Steering Committee and Pigeon Lake Watershed Board of Directors. The following tables provide a snap-shot of the current work priorities of both the PLWA and the PLWMP, the anticipated outcomes, and funding source.

Reference: [Pigeon Lake Watershed Management Plan](#)

Priorities in 2021

5.1 Community Action Advocacy & Education

Plan Total: 19 Community Action Advocacy & Education Recommendations

Lead Role: PLWA (15), PLWMP, Municipal, County

Program / Outcome / Timeline	Actioning the Plan Recommendations	Finance
<p>Residential Property Assessments - Pilot</p> <ul style="list-style-type: none"> • Adapted from LakeSmart Assessment Protocol • Finalize Self Assessment Guide • Training for staff • Book Property Assessments with Residents • Recognition for Residents • <i>Promote:</i> <ul style="list-style-type: none"> - <i>Naturalization Guide: Shoreline Development Guidelines</i> (created in 2020) - <i>Alberta Clean Runoff Action Guide</i> (2020) <p><i>Pending: Funding to hire a Landscape Architecture Technologist to provide residents with Landscape Concept Plans (WRRP)</i></p>	<p>5e Shoreline Practices and Restoration: Provide guidance documents, incentive programs, technical information, and support to shoreline landowners to implement healthy shoreline practices, shoreline restoration, and lake-friendly landscaping.</p> <p>5d Lake Shoreline Property Management Guidelines</p> <p>2b Lawn Fertilizers and Pesticides</p> <p>2c Watershed Stewardship Advocacy & Education</p>	<p>RPA Pilot – Golden Days Landscape Concept Plans – WRRP (Pending) CSJ (Pending)</p>
<p>Caring for the Lake Together: Community Action Stewardship Campaign, Phase II Stewardship Engagement</p> <ul style="list-style-type: none"> • Stewardship information sheets (Fact sheets) • PLWA Speaker Series • Business Engagement <ul style="list-style-type: none"> – Branded bags and window stickers with QR code to stewardship resources • Street Pole Flags for each Municipality <ul style="list-style-type: none"> – Community Posters with QR code to stewardship resources 	<p>2c Watershed Stewardship Advocacy & Education</p> <p>Encourage landowners (residential, business, recreational and agricultural) to adopt proactive lake-friendly environmental management practices, landscaping and activities. Support land use policies and regulatory measures with public awareness and education.</p>	<p>Phase II Unfunded</p> <p>(ACP funded Phase I in 2020)</p>

Program / Outcome / Timeline	Actioning the Plan Recommendations	Finance
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<p>9th Annual Leaders Session (Saturday, April 25 2021)</p> <ul style="list-style-type: none"> • Permanent Monitoring Buoy (Crystal Springs & AEP) • Earth Engine App for Chlorophyll A monitoring with Sentinel 2 Satellite Images and ALMS LakeWatch Data (University of Alberta, ABMI, ALMS, AEP) 	<p>8 Improve regional collaboration, partnerships and organizational effectiveness to promote collective action for a healthy watershed, healthy lake and healthy community.</p>	
<p>Watershed 101 Workshop (Fall)</p> <ul style="list-style-type: none"> • 2021 is an election year for the summer villages, a Watershed 101 Information and collaboration session is scheduled for new council members in the fall to introduce the Plan, BMPS and Stewardship resources. 	<p>8 Improve regional collaboration, partnerships...</p>	
<p>Welcome to the Lake Program (May 2020-June 2021) For: Realtors, home buyers, new home owners</p> <ul style="list-style-type: none"> • Stewardship Working Group with real estate professionals and local leaders • Stewardship Welcome Package for Realtors to provide clients (new home owners in the watershed) • Stewardship training for Realtors: Workshop (in person), Webinar and Podcast • Healthy-Lake practices social marketing campaign to train and connect with Realtor through social media • Web-based portal for Real Estate Professionals w/ links from the Central Alberta Real Estate Association and other local Associations 	<p>8 Improve regional collaboration, partnerships... 8f Incentives to Promote Voluntary Action: Develop non-monetary and monetary incentive programs to promote voluntary action for individuals, municipalities and organizations.</p>	<p>PLWA Alberta Real Estate Foundation Grant</p>
<p>Mulhurst Revitalization Project (April 2020 - April 2022)</p> <ul style="list-style-type: none"> • Park, parking and drainage enhancement • Community lake-friendly demonstration garden & stewardship (Swale and renaturalization area) with a Community stewardship program 	<p>3c Clean Runoff: Promote clean runoff practices on private and public properties as per the Alberta Clean Runoff Action Guide 2c Watershed Stewardship Advocacy & Education 2f Recreational land uses</p>	<p>PLWA County of Wetaskiwin</p>
<p>Stewardship Events/Activities for Visitors & Residents (ongoing)</p> <ul style="list-style-type: none"> • TWIGS – Those Who Initiate Greener Spaces - Youth environmental leaders at Pigeon Lake (Reach Local Schools, Cottages, Producers, First Nations) 	<p>2c Watershed Stewardship Advocacy & Education</p>	<p>PLWA - CSJ Grant Pending</p>
<p>Program / Outcome / Timeline</p>	<p>Actioning the Plan Recommendations</p>	<p>Finance</p>

Great Canadian Shoreline Clean Up – August - October	2c Watershed Stewardship Advocacy & Education	PLWA
PLWA AGM & Open house (July 25, 2020) Business Meeting (Adaptation as Web conference)	2c Watershed Stewardship Advocacy & Education	PLWA
Refueling - Boater Stewardship <ul style="list-style-type: none"> • Develop information Sheet for boaters on how to prevent spillage when refueling. • Work with community to identify the most effect method and products to prevent spillage. • Work with business to stock the best products e.g., gas cans with pumps. 	2c Watershed Stewardship Advocacy & Education	PLWA Funding Pending
Prevention the Spread Programing (Ongoing) <ul style="list-style-type: none"> • Noxious Weeds <ul style="list-style-type: none"> - Invasive Species Awareness Week – Social Marketing through social media, building awareness and expert network (February 24-28) - Invasive Species Awareness and Community Weeding- staff and community help to weed demonstration gardens & online resources • AIS Boater Awareness (Clean, Drain, Dry) <ul style="list-style-type: none"> - Survey boaters entering the lake (Ask for help from Park Staff to distribute the survey) - PSA (Create a new one about Boats from BC) • Watercraft inspection Station, Advocacy Letter (Follow up with GOA) • LakeWatch Mussel Monitoring – Citizen Science Program <ul style="list-style-type: none"> - Coordinate Volunteers who monitor substrates, with Monthly check in 	7a Invasive Species: Complement the Government of Alberta’s province-wide efforts with local initiatives to improve education and build local defenses to keep out aquatic invasive species. Measures include monitoring, public education, signage, and other initiatives 5g Noxious Weeds: Continue invasive species eradication programs, including education, monitoring, and eradiation of prohibited noxious weeds	PLWA
Mamawo Committee Lead: Maskwacis Four Nations (PLWA admin support) <ul style="list-style-type: none"> • Recommendations for First Nations Stewardship and Engagement 	8c. First Nations: Engage the First Nations of IR 138A Pigeon Lake Reserve in the Watershed Management Plan.	(ACP) Grant, Administrator SV Grandview / PLWA

5.2 Policy Statutory Plans & Bylaws (Note: Gray boxes denote municipal initiatives)

Total: 22 Policy Statutory Plans & Bylaws Recommendations being advanced in 2021

Lead Roles: Municipal, PLWMP, Government of Alberta

Programs: PLWA / PLWMP

Program / Outcome / Timeline	Actioning the Plan Recommendations	Finance
<p>Residential Construction Checklist (RCC) - Implementation Primary Audience: Residents and Contractors</p> <ul style="list-style-type: none"> Distribute Checklist to Development Officers and share it with other groups such as ASVA Create a Quick Reference Guide of Beneficial Management Practices for Property Owners as a companion to the RCC <p>Working Group: Don Davidson, Mayor, Grandview; Bob Gibbs, Chair, PLWMP; Randal Kay, Mayor, Golden Days; Ron LaJeunesse, Deputy Mayor, Crystal Springs, Catherine Peirce, Executive Director, PLWA</p>	<p>5d Lake Shoreline Property Management Guidelines Develop a checklist and reference guide to assist development officers and lot owners in addressing the special development requirements for shore line lots. (e.g. On the Living Edge Update). 3c Clean Runoff</p>	<p>PLWA ACP – tbd (allocated under Municipal operations)</p>
<p>Watershed Regulations, Land Use Bylaws (ongoing) Lead: Municipal Planning Services (PLWA support unfunded in 2021)</p> <ul style="list-style-type: none"> Step III Individual Municipal Guidelines (carry over from Fall 2020) 	<p>1b, 1c, 2a, 2e, 3b, 3c, 4a, 4b, 5a, 5b, 8a, 8b</p>	<p>(ACP) Grant, Administrator SV Grandview / PLWA</p>
<p>Intermunicipal Development Plans Lead: Municipal</p> <p>Work toward a watershed-wide Intermunicipal Development Plan (IDP), ... Measures of the Pigeon Lake Watershed Plan 2000 not addressed in the 2018 version will remain in effect until addressed in statutory Plan updates.</p>	<p>8a. Statutory Regional Plans: 1b, 1c, 2a, 2e, 3b, 3c, 4a, 4b, 5a, 5b, 8a</p>	<p>Municipal</p>
<p>LUB Implementation 2021</p>	<p>1b, 1c, 2a, 2e, 3b, 3c, 4a, 4b, 5a, 5b, 8a, 8b</p>	<p>Municipal</p>

5.3 Science & Technical

Total: 8 Science & Technical Recommendations

Lead Roles: PLWMP, Municipal, Government of Alberta

Program / Outcome / Timeline	Actioning the Plan Recommendations	Finance
<p>Municipal Drainage Guide Lead: Alberta Low Impact Development Partnership (PLWA admin support)</p>	<p>3f Water Quality Guideline Develop a drainage water quality guide with quality and release rates guidelines for new major developments and proposed retrofits for existing drainage systems. Phosphorus is to be recognized as the water quality parameter of greatest concern for Pigeon Lake.</p>	<p>(ACP) Grant, Administrator SV Grandview / PLWA</p>
<p>LakeWatch (Summer/Fall 2021)</p> <ul style="list-style-type: none"> Water quality monitoring, ALMS Lead 	<p>6a Advancement of Science: Identify knowledge gaps relating to the formation of cyanobacteria blooms and techniques for meaningful reductions.</p>	<p>Unfunded</p>
<p>eDNA Beach Sampling PLWA Staff to assist AHS, ALMS, and Huntington Labs in Beach Sampling (TBD)</p>	<p>6a Advancement of Science</p>	<p>PLWA</p>
<p>Nutrient Loading - Outflows Preliminary assessment of water quality in culverts and ditches during in spring runoff (may test the same areas during major rain events in the summer as well)</p>	<p>6a Advancement of Science</p>	<p>Unfunded</p>
<p>Nutrient Release – Sediment Analysis</p>	<p>6a Advancement of Science</p>	<p>Unfunded</p>
<p>Science Committee (ongoing)</p> <ul style="list-style-type: none"> Investigating enhanced water quality monitoring including the use of satellite imagery. Committee: Dr. Rolf Vinebrooke, University of Alberta; Evan DeLancey, University of Alberta; Arin McFarlane-Dyer, AEP; Brad Peter, ALMS; Don Davidson, Grandview Mayor; Catherine Peirce, PLWA; Bob Gibbs, PLWMP 	<p>6a Advancement of Science</p>	<p>(ACP) Grant, Administrator SV Grandview / PLWA</p>

5.3 Science & Technical, Continued

(Note: Gray boxes denote municipal initiatives but have been included to show the breadth of the implementation work in 2020)

Program / Outcome / Timeline	Actioning the Plan Recommendations	Finance
<p>In Lake Management</p>	<p>7b In-Lake Management: Evaluate potential management options including project description, costs and financing; effectiveness in reducing phosphorus and algal blooms; reapplication frequency; environmental, social, and economic risks; and regulatory concerns. Implement where feasible.</p> <p>6a Advancement of Science</p>	<p>(ASP) Crystal Springs</p>