

WATER CONSERVATION AND QUALITY IMPROVEMENT GRANT AWARDS – 2021

	Number of Applications	Total Requested	Total Available
Totals	24	\$575,405	\$350,000

Organization	Project	Funding
OIERS/En'owkin Centre	Floodplain Reengagement Project - Habitat Revegetation Phase	\$25,000
Okanagan Collaborative Conservat'n Prog. (OCCP)	Okanagan Lake Responsibility Planning Initiative	\$30,000
Penticton Indian Band	Water Quality Assurance during the Restoration of VDS Section in Okanagan Falls	\$17,000
Okanagan Nation Alliance (ONA)	Groundwater – stream exchange on alluvial fans of the Okanagan Valley	\$30,000
Regional District of Okanagan-Similkameen	Pilot project delineating drinking water protection	\$25,000
Mission Creek Restoration Initiative	Monitoring and Restoration Planning	\$28,000
ONA	A Water Story A Rail Trail Signage Journey Application	\$22,000
City of Vernon	Feasibility Study Naturalization of Vernon Creek in Polson Park	\$25,000
Okanagan Similkameen Stewardship Society	North Vernon Natural Park wetland restoration and community engagement	\$20,000
OCCP	Mitigating the Impacts of Motorized Boating on Water Quality	\$20,000
City of Kelowna	Water Conservation Classroom Educational Toolkit	\$12,000
Regional District of North Okanagan	Cumulative Hydrological Impact Assessment	\$15,000
FreshWater Life	Assessing Microplastics in Okanagan Lake	\$22,000
Sqilxw Apna	N'Sis'ooloxw Project Phase 1.3	\$22,000
BC Small Wetlands Assoc.	Spallumcheen Cultural Ecological Outreach	\$15,000
District of Summerland	Source Water Assessment Update and Protection Plan	\$22,000
TOTAL:		\$350,000

Project Title:	Floodplain Reengagement Project - Habitat Revegetation Phase
Organization:	Okanagan Indian Education Resources Society (OIERS/En'owkin Centre)
Project Goals:	Overall, the k'əmcənɪtkw (pronounced kem-chuh-neet-kwah, and meaning "Alongside the Water") Floodplain Re-engagement Project aims to advance both aquatic and terrestrial habitat restoration, recovery and perpetuation of Indigenous biodiversity, and restoration of the natural ecological processes and functions of riparian and wetland habitats in a portion of the historic floodplain of the Okanagan River, under Indigenous caretakership protocols and practice.

Project Title:	Okanagan Lake Responsibility Planning Initiative
Organization:	Okanagan Collaborative Conservation Program
Project Goals:	The aim of this project is to implement a Sylix water responsibility planning methodology which will create new engagement and decision-making processes for Sylix and non-Sylix partners to co-develop the tkłúsxñítkw (Okanagan Lake) Responsibility Strategy. The Initiative is co-led by the Okanagan Collaborative Conservation Program (OCCP), the Okanagan Nation Alliance (ONA) and the South Okanagan Similkameen Conservation Program (SOSCP). This project is using an adapted Sylix nɕawqñwix ^w engagement process to explore the barriers and solutions that address the cumulative impacts and enhanced protection measures for siwłkw (water) and the land. This planning process will ensure solutions are embedded with Sylix water laws, principles, and practices that values water and the environment as the foundation for sustainability.

Project Title:	Water Quality Assurance during the Restoration of VDS Section in Okanagan Falls
Organization:	Penticton Indian Band
Project Goals:	This ORRI project aims to enhance and restore a portion of the Okanagan River in the Okanagan Falls reach between Skaha Lake and Vaseux Lake, which is a sensitive aquatic ecosystem that has lost its natural habitats and biodiversity due to channelization and the placement of Vertical Drop Structures (VDS). Four VDS were placed in this portion of the river to stabilize the river bed under the increased slope of the channel straightening (channelization). Those structures are now aging (built over 60 years ago) and will eventually need repairs/maintenance. In the Okanagan Falls reach, the gradient, substrates and channel morphology was homogenized and favored the spread of the invasive Eurasian Watermilfoil. The restoration work will increase aquatic habitat quality and diversity for the benefit of various native aquatic species, including targeted Chinook (endangered) and other anadromous salmon, resident trout, sculpins, as well as, the Rocky Mountain Ridged Mussel (endangered).

Project Title:	Groundwater – stream exchange on alluvial fans of the Okanagan Valley
Organization:	Okanagan Nation Alliance

Project Goals:	<p>Flows and low temperatures in tributary streams of the Okanagan River are critical to enable salmonid populations access to spawning and rearing habitat. Stream temperature is affected by both water quantity and source. In the semi-arid Okanagan Basin, low flows coincide with high air temperatures and irrigation demand. Most tributary streams flow across an alluvial fan delta prior to discharging to mainstem lakes or Okanagan River. Low flows on the alluvial fan sections of the streams are thought to be sustained by groundwater inputs and/or release from storage in upper catchment. Evidence suggests that the frequency with which these lower stream sections are experiencing extremely low to no flow during critical periods has increased. Groundwater – surface water exchange on alluvial fan deltas is an acknowledged knowledge gap in the Okanagan Basin.</p> <p>The goals of this project are to:</p> <ol style="list-style-type: none"> 1) obtain estimates of spatial and temporal variation in groundwater – stream exchange across an alluvial fan delta for a high priority stream; and 2) identify effective methods for quantifying the exchange flux and applicability for transfer to other stream – fan locations in the Okanagan Basin to support Environmental Flow Needs assessments and implementation.
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Project Title:	Pilot project delineating drinking water protection
Organization:	Regional District of Okanagan Similkameen
Project Goals:	<p>This project will make it easier for those in the water community to quickly find locations of wells, intakes, and drinking water protection areas for all public water systems within the Regional District Okanagan Similkameen (RDOS) boundaries. It will benefit the water community by helping: a. Drinking water providers (who are operating and managing public drinking water systems) and their regulator (Interior Health) to complete more source protection planning and better handle emergency responses; b. Homeowners, business owners, municipalities and their practitioners that are applying or registering for industrial, municipal, or agricultural waste discharges better understand where drinking water sources are located relative to their plans; c. Regulators (e.g., Ministry of Health, Ministry of Environment and Climate Change Strategy, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, and Ministry of Agriculture) that review discharge applications or respond to complaints. d. Planners with various watershed-scale plans (e.g.: flood and drought plans).</p>

Project Title:	Monitoring and Restoration Planning
Organization:	Mission Creek Restoration Initiative
Project Goals:	<p>Mission Creek Restoration Initiative (MCRI) is a multi-disciplinary, multi-stakeholder partnership formed in 2008 to restore the natural function of the lower reaches of Mission Creek in Kelowna, from East Kelowna Road Bridge to Okanagan Lake. The primary aim is to restore fish and wildlife stocks and supporting habitat. Complimentary objectives are to conserve and expand biodiversity and species at risk, improve flood protection, contribute to improved water quality and quantity, to educate the public, and to inspire and support community stewardship. The first step</p>

	<p>toward meeting this target has been the delivery of a demonstration project (Phase 1) showcasing the values and benefits that can be achieved for the Mission Creek watershed through restoration of fish and wildlife habitat, in conjunction with an intensive monitoring program to determine effectiveness in addressing the stated objectives. The second step, referred to as Phase 2, has involved development of a plan to direct future conservation and restoration actions in lower Mission Creek. MCRI initiated a 3 year project in 2020/21 (Year 1) incorporating ongoing monitoring with development of a conservation and restoration plan, which was funded by OBWB and HCTF.</p>
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Project Title:	A Water Story A Rail Trail Signage Journey Application
Organization:	Okanagan Nation Alliance
Project Goals:	<p>The project will install signage along the Okanagan Rail Trail (ORT) that conveys key messages developed for the Social Life of Water (SLOW) museum exhibit developed in 2016. The goals of the project are to increase public awareness of the importance of water and all species that rely on water in the Okanagan, and of the fragile relationship between people and watersheds in the Okanagan, and to inspire residents and visitors to adopt more sustainable water behaviours. Finally, by including Indigenous perspectives the project will enhance cultural awareness and appreciation. The SLOW exhibit could generate enough information for about 15 signs. The requested funding from OBWB will provide the project with the minimum level of funding needed to deliver the project, which will develop about 75% of the SLOW exhibit into 11 Rail Trail signs. Additional funding may be sought from other organizations to expand the scope of the project to develop 15 signs. The project is viable with 11 signs. The proposed project has already received strong support from the Okanagan Rail Trail Committee, representing City of Kelowna, OKIB, District of Lake Country, and RDNO. 70% of the required cash and in-kind funding is already committed.</p>

Project Title:	Feasibility Study Naturalization of Vernon Creek in Polson Park
Organization:	City of Vernon
Project Goals:	<p>Over the last hundred years, as Vernon developed its urban core, Vernon and BX Creeks have been significantly altered, they have been moved, channelized, filled, constrained, built over, and placed in culverts. These developments have negatively impacted the ecosystem function and the water quality of both of these creeks, Okanagan Lake and their watersheds. With this project (Polson Park Vernon Creek Naturalization Feasibility Investigation), the City of Vernon wishes to achieve a better understand of how to restore ecosystem function to the creek through Polson Park. This would improve water quality in the creek and through to Okanagan Lake, help to mitigate downstream flooding, integrate the expected impacts of climate change, improve aquatic and riparian habitat and allow the creek to become more of an interactive feature in the park. This would also provide opportunities to increase the community's understanding of the importance and value of the creek as a natural asset to our community. This project ties into several goals in the Council Strategic</p>

	Plan 2019-2022 including: Undertake drainage studies, risk and threat assessments; Complete the Polson Park Master Plan; and Commence priority Polson Park projects. This project also ties into the goals of the approved in principle draft Climate Action Plan which emphasizes the need to address natural assets and integrate climate change considerations into our understanding of flood risk in Vernon. The overarching goal of this project is to determine the feasibility of naturalizing Vernon Creek through the park.
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Project Title:	North Vernon Natural Park wetland restoration and community engagement
Organization:	Okanagan Similkameen Stewardship Society
Project Goals:	Through this project we will build community support for restoration of natural wetland areas through the creation of a demonstration riparian and wetland restoration in the BX Creek trail Natural Space at Deleenheer Road. Local residents will have an enhanced and broader appreciation for riparian areas and wetlands and their function on the landscape, and be involved in hands on stewardship of their community park. This site will function as a demonstration site with interpretive signage. It will help to raise awareness of existing technical and partnership support for restoration projects on both private and public lands through Okanagan Similkameen Stewardship.

Project Title:	Mitigating the Impacts of Motorized Boating on Water Quality
Organization:	Okanagan Collaborative Conservation Program
Project Goals:	This project is the final phase of a multi year initiative that has completed research to identify the impacts of boat wakes in Kalmalka and Wood lake on water quality, aquatic habitats and shoreline erosion. It has also developed recommendation to minimize wake impacts and designed outreach materials to change the behaviors of boaters. In 2020, the OCCP, RDNO and the Districts of Lake Country and Coldstream hired Conservation Officers to complete enhanced boat patrols on Kalamalka and Wood Lakes to engage with boater to encourage voluntary compliance for boating in deeper waters. In 2021, this project will hire a marketing firm to develop a communication strategy for the "I'm a Wake" marketing campaign. The campaign will be developed in collaboration with the local government partners in this project with a goal that other local governments in the Okanagan region will be able to utilize and adapt the marketing campaign. The strategy and campaign will clearly and effectively communicate the impact of boating in shallow areas near shorelines with the objective to achieve voluntary compliance from boat owners to follow recommended guidelines identified in the research completed in 2017-19. The three research projects identified; lake bottom sediments contain contaminates (hydrocarbons, bacteria and heavy metals), that wakeboard boats can disturb and resuspend the lake bottom to a depth of 8 meters and the re-suspended sediments from motorized boating can drift to municipal and domestic intakes and negatively impact water quality. The research also identified erosion impacts on property and damage to fish spawning habitat and bird nesting areas on the shoreline. The recommendations from the research included no-wake zones in shallow waters, spill

	management plans and the development of new boating regulations following the review of a three-year outreach program.
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Project Title:	Water Conservation Classroom Educational Toolkit
Organization:	City of Kelowna
Project Goals:	The City of Kelowna received feedback from a number of elementary school educators stating that they would utilize and greatly benefit from a locally produced visual water conservation promotional material. The proposed visual media production would be a key engagement element as part of an educational classroom toolkit to encourage action, accountability, and knowledge of increasing climate change. The net result is to instill the value of water to the next generation by talking directly to the students, practically demonstrating water conservation measures, and challenging students to think critically about their local water use.

Project Title:	Cumulative Hydrological Impact Assessment
Organization:	Regional District of North Okanagan
Project Goals:	The goal of this project is to improve water security through the development of an assessment methodology useful across the Okanagan Basin for better understanding cumulative impacts in forested watersheds that effect water quantity. This goal will be achieved via the following objectives: 1) assess the cumulative hydrological effects of forest disturbance, including roads; 2) assess the cumulative hydrological effects of proposed forest harvesting under future climate change impacts; and 3) evaluate possible hydrological impacts of spatial arrangements (or patterns) of forest disturbance or harvesting. Answering these questions would provide solid data and results to support decision makers to manage the relationships between land activities and water supply under an increasing human demand and climate change context. Activities such as historic forest disturbance (e.g., roads, Mountain Pine Beetle infestation, fire, harvesting), cattle range, proposed future timber harvesting, agriculture, population increase and urbanization, and climate change have discrete and cumulative effects on watershed hydrology. Water suppliers are facing growing concerns over future water supply resilience with respect to both water quantity and water quality for the community and ecosystem functions, yet there are very few tools available to evaluate cumulative impacts in a watershed. The project proposed seeks to fill this gap using the Duteau Creek Watershed as the laboratory to develop an assessment methodology that will be applicable to other similar watersheds in the Okanagan Basin.

Project Title:	Assessing Microplastics in Okanagan Lake
Organization:	FreshWater Life
Project Goals:	The goals of this project are threefold: 1) to determine if microplastics are present in Okanagan Lake; 2) if wastewater is a potential source of contamination; and 3) if microplastics are present, determining localized solutions to mitigating

	<p>microplastics entering waterways that are achievable and community-oriented. We are unaware of published data on microplastics in Okanagan Lake and wish to initiate a sampling program with a focus to confirm the presence/absence of microplastics. Thus, this project is a scoping study, to determine if additional study or expanded monitoring is warranted. We expect that plastic use in the Okanagan follows global patterns of use and disposal, and any plastic pollution in the Okanagan environment would be due to the human population living, working, and visiting the Valley. With the bulk of the population in the Okanagan Valley residing on or close to the Okanagan Lake, and the communities of Vernon at the north end (Kelowna, West Kelowna, Peachland, Summerland and Penticton/Naramata at the south) constituting approximately 250,000 residents that at least partially rely on the Okanagan Lake for their daily water use including release of wastewater, we hypothesize that plastics have been and are possibly being inadvertently discharged into the Okanagan Lake with uncertain consequences in the short term and long term.</p>
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Project Title:	N'Sis'ooloxw Project Phase 1.3
Organization:	Sqilxw Apna
Project Goals:	<p>The N'sis'ooloxw Project aims to restore the N'sis'ooloxw watershed corridor to the biofiltration operating capacity of a diverse ecological system that would reflect an old-growth condition. Prior projects have focused on the lower 1.25 km of the N'Sis'ooloxw creek, revealing scattered pockets of diverse ecosystems with high importance to the Indigenous north Okanagan, the Sqilxw, people. We aim to regenerate the N'Sis'ooloxw Creek to the pre-1820's time period when the forest held last an old-growth forest condition, with the capacity to shield, store, and filter large quantities of water through plant bodies, mycelial mats, and soils of the holistic living system. We aim to restore Indigenous habitat alongside the eco-ethnography held in the oral history of Sqilxw People of the North Okanagan. We aim to stimulate and structure water security in the following ways. Intensive Habitat Restoration Stacking simultaneous canopy layers of Indigenous plants from rooting plants, groundcovers, herbaceous plants, shrubs, vines to trees. Promoting rapid succession of the forest system with dense plantings and living biomass that retains moisture, builds soil, shades the creek, and supports future generations. With built-in Indigenous Sqilxw land-relationship reconnection and well-being. Involving Elders with Syilx language, oral history, and place-based memory in all decision-making and implementations. Engaging the Sqilxw and non-Indigenous allies of the community with land based and Sqilxw-informed youth programs, outings, Knowledge sharing opportunities, and physical activity through replanting a traditional use site. Focusing on Indigenous plants, Sqilxw First Foods, medicine, and plants of importance for the Sqilxw community. Inviting Sqilxw relevant forest cultural acknowledgements and intentions. Disseminating and mobilizing Sqilxw and relevant science and technology knowledge across the Sqilxw community and the north Okanagan, more broadly. These actions are designed to nurture our water by structuring a long-term and self-sustaining natural system infrastructure. Our focus is regenerative, promoting the water held within the living system to travel through</p>

	a reconstructed biofilter of the forest's natural biome, to increase the outflow of clean water into the Okanagan Lake. The above actions directly support rebuilding holism in the forest by reconnecting and mobilizing the Sqilxw eco-ethnography as part of the recreation of the dense, diverse riparian canopy.
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Project Title:	Spallumcheen Cultural Ecological Outreach
Organization:	BC Small Wetlands Association
Project Goals:	<p>The BC Small Wetlands Association (formerly the New Beginnings Benevolent Society) will continue the evolution of a historically devolved two-acre wetland heritage park as a grassroots living showcase of maturing small wetland ponds and native plants, trees and shrubs, adapting and revising the program model as necessary and ensuring we can share with other communities throughout the valley. We are aware of the concerns expressed by organizations such as the World Wildlife Federation, the Real Estate Foundation of BC and the Okanagan Basin Water Board about the gaps in wetland data, particularly with respect to small wetlands. We are looking at ways for our organization to engage, to help collect data and to report small, previously unmarked wetlands. We are exploring new relationship building opportunities through connecting with the Secwepemc community and long-term residents in Armstrong and Spallumcheen. Youth are learning to communicate through the website and find new ways to broadcast their data gathering activities. Our goal is to update our cultural ecological outreach to include what we continue to learn about the important role small wetlands play in water quality, water security and climate change adaptation. We are adapting to the physical distancing and gatherings restrictions caused by the pandemic and we have been able to open the park to the public. Visitors who are long-term residents and Splats'in Elders have provided valuable local knowledge that youth are helping to incorporate into our historical research. Youth wetland ambassadors are involved in updating the cultural outreach through their own research, logging and monitoring. Through online webinars our ambassadors learned more about the vulnerability and insecurity of small wetlands under one hectare that are not surveyed and not protected. We also learned that buffer zones are no longer adequate in some wetland areas. We want to help bridge small wetland knowledge gaps by disseminating what we learn and advocating for the identification and protection of small wetlands. We aim to add value to the work of established wetland conservation organizations and complement existing water security education. Through park signage and the park website and through collaboration with small and rural communities in the Okanagan and across BC, we will encourage other conservation organizations to create their own unique standard for water security education and to reach out to their communities through programs for youth.</p>

Project Title:	Source Water Assessment Update and Protection Plan
Organization:	District of Summerland
Project Goals:	The District intends to fully assess and identify threats to the water quality in our watershed and create a plan with stakeholders to move forward with the update of

	<p>the District's Water Supply Source Assessment and create a Source Protection Plan. These will allow the District to work towards an improved additional barrier for drinking water protection for the community as well as providing information that can help form municipal policies and bylaws; benefit and influence planning; and measure impacts on water quality. The deliverables will be a comprehensive update of the District's existing Water Supply Source Assessment which was created in 2002. Once complete the District will proceed with the preparation of a Source Protection Plan.</p>
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