



Phase 2 of **RES'EAU-WATERNET's** mandate to improve access to quality drinking water in small, rural and First Nations communities (SRCs) got off to a powerful start in 2014. Thanks to the boundless energy and commitment of our researchers, HQP, trainees and partners (among academia, industry, communities, regulators and government), it was an impactful year in terms of networking, learning, knowledge translation and meaningful community engagement. **Here are some highlights:**

Community Circles
— development —



RES'EAU Scientific Director Dr. Madjid Mohseni addresses the community in Shawnigan Lake.



RES'EAU personnel and partners meet with community Elders in Lytton, BC.

*Our internationally recognized **Community Circles** framework takes research program out of the lab and into real communities, incorporating stakeholders' perspectives at the earliest stages of the problem-solving process. This year, we made great strides working alongside two collaborating BC communities.*

Lytton First Nation – Here, our partnership focuses on upgrading the water system in Lytton First Nation IR25 (Nickeyeah), which includes improving water intake and treatment as well as the local reservoir. This work requires an understanding of the seasonal variability in source water quality while assessing the feasibility of various technologies for water treatment in the community using our new, state-of-the-art Mobile Water Treatment Pilot Plant (see next page).

Cowichan Valley Regional District (CVRD) – Our work here involves research on national and international models of devolved water governance, as well as a project seeking to understand climate and watershed land-use impacts on chemical and microbial quality of source water and community vulnerability. We are also evaluating several alternative treatment technologies



with the Mobile Water Treatment Pilot Plant to compare performance, operating costs and practicality. The goal of the project is to determine the most feasible and sustainable water treatment alternatives for Shawnigan Lake and similar communities.

Metro Vancouver – Our pilot treatment system was installed at the at the Metro Vancouver’s Seymour Capilano Filtration Plant (SCFP) in April, 2014 with the support of Metro Vancouver. Investigation is ongoing to evaluate the efficiency and the viability of VUV/UV based water treatment system technology under real operating conditions at the SCFP. The effectiveness of the system to degrade model contaminant has been studied with raw waters of varying characteristics and flow rates. Investigation of the VUV water treatment technology at SCFP will continue until June, 2015.

Mobile Water Treatment — pilot plant launched —

Validating water treatment technologies tailored to the local needs of small, rural and First Nations communities (SRCs) has gone mobile thanks to a partnership between RES’EAU-WaterNET, UBC, the Peter Wall Institute for Advanced Studies (PWSI), IC-IMPACTS, Trojan Technologies and BI Pure Water.



Together, we launched the RES’EAU Mobile Water Treatment Pilot Plant, a state-of-the-art lab on wheels that boasts a wide range of water treatment options, including filtration, ion exchange, activated carbon adsorption and both conventional and vacuum UV. The mobile system was designed to evaluate these processes individually or in combination.

After a successful rollout, the unit was involved in a road accident in November. Thankfully, the driver received only minor injuries, and despite significant damage the plant will be back on the road in 2015!



Developing Canada's — next generation of water professionals —

A major component of RES’EAU-WaterNET’s mission is to foster and support a new generation of water professionals who are primed for top positions in research, industry and beyond. Since the network’s launch, more than 100 highly qualified personnel (HQP) (from undergrads to post-doctoral fellows) have participated in our research, outreach, communications and knowledge translation activities. Here’s what they were up to this year.



RES'EAU Small Water Systems Orientation and Training Workshop

December 9-11, 2014, Walkerton, ON

Eighteen network HQP spent three days at the Walkerton Clean Water Centre in this Ontario community, where they received a firm grounding in water quality assessment and conventional and emerging water treatment approaches. They also visited a local treatment plant and the infamous Well #5, source of the *E.coli* contamination that killed seven people and made 2,500 ill in the spring of 2000. The event was also funded through RES'EAU-WaterNET and the NSERC Strategic Enhancement Initiative (SNEI) program.

Youth Workshops

July, 2014, Saugeen First Nation and the Chippewas of Nawash Unceded First Nation, Ontario

Respecting the spirit and life-giving force of water was a recurring theme in two workshops produced in July, 2014 focusing on the importance of water quality through a culturally relevant and holistic lens. In partnership with the Walkerton Clean Water Centre, the Saugeen First Nation and the Chippewas of Nawash Unceded First Nation, the workshops engaged 10 youths aged 13 to 18 through presentations, guest speakers and interactive, hands-on activities. The project was also funded through RES'EAU-WaterNET and the NSERC Strategic Enhancement Initiative (SNEI) program. The events were organized and hosted by network HQP Elliott Corston-Pine and Luke Brennan of the University of Guelph. A survey indicated that the youth gained significant knowledge of drinking water and wastewater treatment processes, the importance of maintaining clean water and clean water distribution systems and the significance of the Walkerton tragedy. Check out a video taken at the workshops by [clicking here](#).

Building and coordinating a strong coalition of individuals and organizations with the skills, resources and will to improve SRCs' access to clean drinking water is at the heart of what RES'EAU-WaterNET does. Here are just a few examples of how we connected, shared and learned in 2014.

Annual Meeting 2014

Vancouver, BC

The 2014 instalment of the RES'EAU-WaterNET Annual Meeting marked the official launch of the network's second phase. More than 60 network members attended, along with 41 HQP who presented 31 research posters. RES'EAU investigators presented detailed overviews of research areas related to the network's agenda, and several guest speakers discussed key topics related to our research agenda. The second day featured a professional development program for network HQP, entitled Building Healthier, More Sustainable Communities through Infrastructure Asset Management – A Boot Camp for Water Professionals. The program was led by Danny Higashitani of Aboriginal Affairs and Northern Development Canada.



THE FOLLOWING INITIATIVES WERE ALSO SUPPORTED BY THE NSERC STRATEGIC ENHANCEMENT INITIATIVE (SNEI) PROGRAM:

First Nations Infrastructure Conference and Trade Show

February 3-5, 2014, Toronto, ON

RES'EAU hosted two special sessions at this event, which represents a unique and timely opportunity for dialogue and information sharing on current infrastructure and other challenges facing First Nations. Find out more about our panel discussions by [clicking here](#).

2014 First Nations Water Symposium

March 4-5, 2014, Niagara Falls, ON

The RES'EAU team was pleased to host a workshop here, entitled "Towards Sustainable Drinking Water Solutions for the Small Communities with Intermittent Road Access." Dr. Edward McBean, Canada Research Chair in water supply security at the University of Guelph and RES'EAU investigator, outlined the network's key objectives and highlighted our role as an NSERC Strategic Network in providing tailored drinking water solutions for small, rural and First Nations communities.

Forging Global Collaborations

A new partnership between RES'EAU-WaterNET and the Swiss Federal Institute of Aquatic Science and Technology (EAWAG) will develop new approaches to water purification in small water systems while fostering related inter- and trans-disciplinary research among social sciences, engineering and natural sciences in Canada and Switzerland.

EAWAG boasts 12 research departments that focus on trans-disciplinary for an integrated approach to research on water and water bodies. A delegation of RES'EAU researchers and Canadian water experts from complementary disciplines traveled to the EAWAG facility in Dübendorf in April. There, they met with EAWAG researchers attended a workshop organized to identify synergies and possible collaborative projects, and toured a local water system to view recent technological upgrades.

7th Annual BC First Nation Water & Wastewater Operational Excellence Conference

October 8-10, 2014, Vancouver BC

RES'EAU-WaterNET investigators and students/engineers were on site making research relevant for First Nations by providing updates on their work in First Nations communities in BC and Ontario. Hosted by Aboriginal Affairs and Northern Development Canada, the event attracted water operators from across the country. RES'EAU hosted a half-day session, and for the second year in a row co-hosted (with UBC's Department of Chemical and Biological Engineering) the pre-conference visit of 90 delegates to several UBC labs and research facilities.

RES'EAU People of the Year 2014



Principal Investigator:
Dr. Edward McBean
Ed has

been a stalwart supporter of RES'EAU since day one, and is instrumental to our networking efforts with First Nations communities and advancing countless initiatives.



Partner:
George Thorpe,
BI Pure Water
George is co-own-

er of BI Pure Water Canada Inc. and Paragon Power Inc., and serves on our board of directors. Somehow, he finds time to keep us connected with industry insights, and has made invaluable contributions to our Community Circles program.



HQP: Joerg Winter and Yvonne Post

A tireless volunteer, Joerg is a PhD Candidate who happens to have enough energy to organize our online roundtable sessions. Yvonne works on water safety plans for small drinking water systems, but also went above and beyond to organized our Small Water System training program at the Walkerton Clean Water Centre.



Special Mention:
John Bergese
Between a busy schedule

and some uncooperative weather, John (a research engineer working with network PI and Scientific Director Dr. Madjid Mohseni) plays an instrumental role in implementing our Community Circles, which means he rarely sees his new Vancouver home.



Special Mention:
Elliott Corston-Pine
Elliott is currently

working at the University of Guelph as the Facilitator for Water Needs of First Nations Communities and holds a degree in biotechnology from Fanshawe College. As part of his work with the University of Guelph, Elliott assists the RES'EAU team in building relationships with First Nations communities in Ontario.