Adapting to Change: Working Toward Climate Resilience with the ART Program

Kids make the best of a flood on the streets of Edmonton. Photo credit: Mufty Mathewson

Our monthly topic is Climate Change, so we spoke with two of our NSWA Watershed Planning Technicians about their involvement in the Adaptation Resilience Training (ART) program.

After graduating from the University of Alberta, Jillian Peterson and Kaila Belovich were searching for opportunities in their given fields. Belovich completed her BSc in Earth & Atmospheric Sciences and a Minor in Human Geography & Planning (2021), while Peterson finished her BSc in Environmental and Conservation Sciences with a specialization in Human Dimensions (2020). In the fall of 2021, both Belovich and Peterson successfully applied to the University of Alberta's ART program where they worked as Project Assistants (PAs) for two very different host organizations. Belovich worked as a PA for the City of Calgary's Flood Resilience Program while Peterson worked as a PA for a new climate resilience partnership between three rural municipalities in the North Saskatchewan watershed.

The ART program employs recent graduates to assist host organization with projects contributing to climate change adaptation, with a specialized focus in one of four climate resilience streams: water management, infrastructure, agriculture, and/or community planning. Peterson was part of the Community stream while Belovich was part of the Water Management stream. Based on study focus or work experience, applicants had some say in which stream they would join or what project would be a good fit.

THE CITY OF CALGARY: FLOOD ADAPTATION

Belovich describes her role with The City of Calgary as having two main components, saying, "The first one was writing a white paper on flood insurance, so overland water and sewer backup coverage for homes. The second one was figuring out what property-level mitigations other municipalities across Canada and internationally have been implementing." Like many climate resilience initiatives, her work on *Property-Level Flood Resilience & Mitigation Within The City of Calgary* was primarily due to Calgary's devastating flood in June of 2013.

Understanding infrastructure's role in mitigating floods in a large and fast-growing city like Calgary is imperative, according to Belovich. Because her internship happened during COVID, Belovich mostly worked with secondary research, "reviewing online articles, news reports, and fact sheets to determine what's currently available in the insurance market for flood insurance coverage, and to find out what property-level mitigations are out there for homeowners to implement." She also virtually interviewed several people within the insurance industry, adding, "We discussed peoples' perception of flood risk, and the availability of insurance for homes living with a high-risk of river flooding."

The final report produced by Belovich during her ART Internships with the City of Calgary.

Watershed Planning Technicians Kaila Belovich (left) and Jillian Peterson (right) work on a NSWA project in the summer of 2022. Photo: NSWA.

PARTNERING FOR RESILIENCE IN BRUDERHEIM, GIBBONS & LAMONT

Here in our watershed, Peterson and her co-intern, Claire Kroening, joined a partnership between three small municipalities called Resilient Rurals in the fall of 2021. The initiative is a collaboration between the Towns of Bruderheim, Gibbons, and Lamont to pool resources and share ideas for future climate-related challenges in Alberta's Industrial Heartland. In a nutshell, having identified each community's main pinch points, vulnerabilities, and priorities, Resilient Rurals works to proactively plan, coordinate, and implement solutions.

Peterson's role with the initiative was to develop a resource hub for communication materials (for residents, agricultural producers, municipal staff), rural networking campaign, and a pilot program called Rural Assist. Peterson describes the success of Rural Assist, saying, "We were trying to connect residents who might be critically vulnerable to certain climate risks — including severe weather and service disruptions — to resources, assistance, and information." The project was piloted in Bruderheim, where the town worked to figure out how every resident could receive emergency alerts or what chain of connection was needed to make sure no resident will be left behind.

HOW PAST CLIMATE EVENTS SHAPE FUTURE ACTIONS

A blog written by Peterson for Resilient Rurals, outlines many of the common issues and risks that Resilient Rurals is seeking to mitigate. Flooding in Lamont in 2016 and 2018 unearthed several issues that needed to be addressed for similar future events. In speaking with residents, Peterson heard, "There was a little bit of a breakdown in communication in the first 24 hours of the flood. And the main issue was sewer backups." The floods precipitated the need for the town to create a flood plan. "But, a lot of the climate adaptation work is looking at preparing communities before something happens so that they're proactive rather than reactive -- and sharing these stories, letting other communities know."

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> *~ Jillian Peterson*

Belovich and Peterson agree that lack of preparedness was a key factor when looking at how communities dealt with past climate events. Of the 2013 floods, Belovich says, "People weren't well prepared for a flood of that magnitude when it happened. And because it devastated that really integral downtown core of Calgary, the city improved this program to sort of 'build back better', in a way." This means new floodplain mapping, better climate modelling and watershed management, make better land use decisions where possible as well as create an understanding for how to keep current buildings and communities safe.

LESSONS LEARNED THROUGH THE ART PROGRAM & HOW THAT INFORMS CURRENT ROLES WITH THE NSWA

Both Peterson and Belovich say they learned some valuable things through their internships. Belovich says her work with the City of Calgary helped her "understand municipal processes and jurisdictional duties a lot better. For example, what mitigation measures are the responsibility of a municipal government, versus provincial, versus federal."

Belovich has brought that understanding of municipal processes to her role with the NSWA and values how the NSWA brings together a variety of stakeholders and municipalities "to collaborate and discuss adaptation and mitigation" on

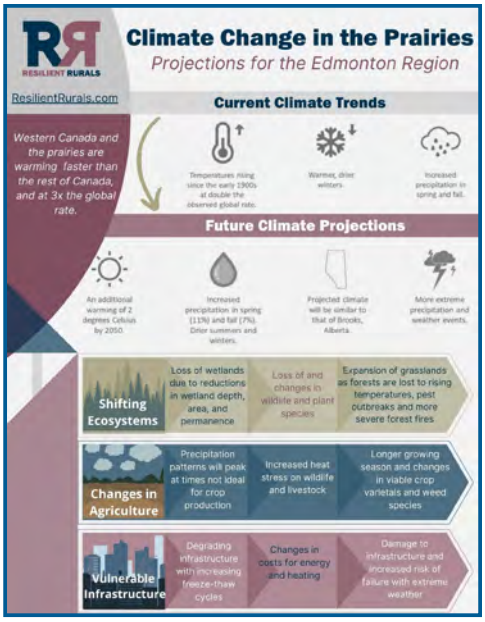
complex issues like climate change. Belovich believes this allows for varying viewpoints and values to be tabled and considered, “whether it be related to riparian areas, water quality, or other water-related concerns.”

The Industrial Heartland’s neighbourly spirit made an impression on Peterson, who says, “One thing that stuck with me is that small-scale projects like community gardens and social programs that help vulnerable people can help drive community resilience. Having people who are actively engaged in town events and activities, and prepared to volunteer is really important.”

As for how the NSWA can help such municipal partnerships, both Peterson and Belovich point to our role as educators and raising awareness about climate issues -- and how more frequent extremes and unpredictability will require a more adaptable approach.

On that note, Peterson says she learned a lot about how best to communicate with people on the topic of climate change, given that the subject can prove contentious. Peterson found that “focusing on adaptation and preparation, while understanding that these initiatives often help with mitigation, is a good way to start.”

Belovich says she would recommend the ART program to others and summarized, “It was great work experience, my mentor and supervisor were awesome, and it helped me advance my literacy research skills.” On a personal and practical note, she adds, “One thing I did learn was to be cautious of natural hazards that may be prevalent in an area when purchasing a house.”



One of the many communication sheets created by Peterson & her co-intern to help inform residents in the Industrial Heartland about how the climate may be altered in the future.

Peterson is also an advocate of the ART program and its interdisciplinary nature, which “can apply to a variety of different degrees and sectors. It’s a great way to grow your career and learn how climate change adaptation applies to so many different fields.”

To learn more about the Adaptation Resilience Training (ART) program, please go to: https://www.ualberta.ca/sustainability/experiential/adaptation-resilience/index.html

To learn more about Resilient Rurals, please go to: www.resilientrurals.com

To learn more about The City of Calgary’s Flood Resilience Plan, please go to: https://www.calgary.ca/water/flooding/resilience-plan.html