Associated Engineering

AETODAY

2025 **Issue 2**

RESTORING NATURE'S SANCTUARY

REHABILITATION OF BURNABY LAKE ROWING PAVILION

SEE PAGE 6

AETODAY issue 2 2025

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Celebrating 17 years as one of Canada's Best Managed Companies!

We're extremely proud to share that for the 17th year, Associated Engineering has requalified as a Platinum Member of **Canada's Best Managed Companies** program. We continue to be part of a prestigious group of firms recognized for operating at the highest level for business performance, innovation, talent retention, and sustainability.

Associated Engineering would not be one of Canada's Best Managed Companies without our dedicated staff. We thank our staff for their technical excellence, exceptional client service, and volunteerism in our communities.

To commemorate this achievement, we hosted celebrations in our offices across Canada, to thank our staff for their contributions and commitment!

Summer office hours

To provide our employees with more personal and family time and greater flexibility during the summer, we have adjusted our standard office hours to 8:00am - 4:30pm for the months of June, July, and August.

Our commitment to our clients and partners remain our priority. Should you have any questions, please contact your project manager or local AE branch (see www.ae.ca/contact).

Promotions

Corinna Hoodicoff promoted to General Manager, Associated Environmental Consultants

We're very pleased to announce the promotion of **Corinna Hoodicoff, M.Sc., R.P.Bio.** to the position of General Manager of Associated Environmental Consultants, effective July 1, 2025. As General Manager, Corinna will lead our Environmental practice, which includes over 100 staff across Western Canada.

Corinna is a Senior Biologist with more than 25 years experience specializing in terrestrial biology and landscape ecology. Her experience includes environmental impact assessments, permitting, policy and planning, preliminary design, environmental monitoring, and project management.

Since joining Associated Environmental Consultants (previously Summit Environmental Consultants) in 2005, Corinna has been instrumental in building our Environmental operation as manager of the Environmental Assessment and Planning Group in Vernon and, most recently, as Division Manager of the BC/Northern Division.

Richard Simpson appointed as Senior Vice President, Environmental

Associated is excited to announce that **Richard Simpson, M.Sc., RPF** has been appointed as Senior Vice President, Environmental. In this role, Richard will support the technical development of staff, as well as marketing and project delivery for our Environmental practice.

A Professional Forester, Richard specializes in regulatory approvals and environmental planning for major projects. He has worked on major projects such as Edmonton's Valley Line LRT and Capital Line LRT, West Calgary Ring Road, Deerfoot Trail Improvement project, and the Acadia Irrigation Project.

Carma Holmes promoted to National Leader, Buildings

We are happy to announce that **Carma Holmes, MBA, P.Eng., LEED AP** has accepted the position of National Leader of our Buildings Practice. Carma will provide leadership to staff in our Buildings practice across Canada, and assist in marketing, business development, and project delivery.

Carma's 25 years of experience has focused on the design and retrofit of municipal, industrial, institutional, and commercial facilities, as well as buildings and infrastructure for Indigenous Communities. Carma is passionate about designing sustainable and resilient facilities. She brings innovative, value-based solutions to our projects and clients, drawing on her collaborative and responsive approach to project delivery.

Congratulations, Corinna, Richard, and Carma, on your new roles!

Brent Phillips named Chief Operating Officer

Associated Engineering is very pleased to announce that **Brent Phillips, R.P.Bio.** has accepted the role of Chief Operating Officer, effective July 1, 2025.

Brent has spent his 30 year career in consulting, working for various firms before joining Associated Environmental Consultants (previously Summit Environmental Consultants) in 1999. He has diverse experience providing advisory services in aquatic and terrestrial ecology on mining, forestry, oil and gas, hydropower, transportation, urban development, and infrastructure projects. Brent has served in progressive roles within the organization, including biologist, technical lead, and project manager. Later, he led project teams as Group Manager, Division Manager, and, most recently, Vice President & General Manager of Associated Environmental Consultants.

Congratulations, Brent, on your new role!

Brent takes over the role from Lance Kubrak, C.A., CPA, who retired from the company in late June. Thank you, Lance, for your dedicated service to the company for more than 30 years!

Associated recognized with two project awards at Transportation Connects conference

In March, at the Transportation Connects conference, Alberta Transportation and Economic Corridors presented the Associated Engineering team with a Partnering Award for our work on the **West Calgary Ring Road DB2 - Highway 8 to Old Banff Coach Road Segment**. As well, our Environmental team received a Minister's Award for Transportation Innovation for Alternative Contamination Management on the **Deerfoot Trail Improvements** project.

Congratulations to all involved!

West Calgary Ring Road DB2 project team

Deerfoot Trail Improvements project team

Duncan First Nation project team

Parks Canada project team

West Calgary Ring Road project team

Associated receives awards for innovation and technical excellence at CEA's Showcase Awards

In April, at the Consulting Engineers of Alberta's annual Showcase Awards, we won an Award of Excellence for the project, **Coast to Coast: Understanding Infrastructure Maintenance Needs**, for Parks Canada Agency.

Our team on the **West Calgary Ring Road** received an Award of Merit for Design-Build Innovation: Collaborative Project Management.

Our third award of the evening was for **Building Community Capacity** for the Duncan First Nation, which received an Award of Merit. Congratulations to the project teams!

Project win at the ACEC-Manitoba Awards

Congratulations to our team on receiving an Award of Merit for the **Sioux Valley Water Treatment Plant** project at the ACEC-Manitoba Awards ceremony in Winnipeg last month! Associated Engineering was retained by Chief and Council through their project manager, Prairie Water Consultants, to design and administer the construction contract for a new water treatment plant. Designed, constructed, and commissioned in 29 months, the new water treatment plant creates a long-term, reliable, sustainable, and resilient water supply for the Nation.

Staff Profile

A love of math and physics and desire to connect people inspired Katrin Habel's career in bridge engineering

Katrin Habel surveys bridge rehabilitation works at the Alexandra Bridge

*As a young girl, **Katrin Habel** was passionate about math and technology. She played with Lego and enjoyed playing number and math games with her dad. Later, in high school, Katrin was inspired by lessons that discussed opportunities for women in science and engineering. During her university studies, Katrin highlights an exchange year at École Polytechnique Fédérale de Lausanne in Switzerland, where she was exposed to learning through a mix of theory and practice, which ignited her passion for bridges. She also credits a female friend and structural engineer for helping her to see what she could be, as well as her professor and PhD supervisor, Dr. Eugen Bruehwiler, for fueling her interest in bridge rehabilitation.*

Today as a Senior Bridge Engineer and Manager of the Transportation Structures team in Vancouver, Katrin's team focusses on bridge design and rehabilitation. Katrin shares, "Bridges are the pinnacle of structural engineering, allowing engineers to be creative in our designs, and with the benefit of connecting people."

Katrin's first consulting engineering job was in Edmonton, AB. She credits her supervisor for his mentorship, for believing in her, and teaching her about the consulting industry and life; their professional relationship continues to this day.

When asked why she sought a career in consulting engineering, Katrin shares, "I wanted to engage in meaningful work where I could create something, develop designs from my ideas, and see them through to completion."

The strong reputation of Associated Engineering's bridge practice was a factor that drew her to join the company. She says, "I knew some of Associated's staff in Edmonton, and I wanted to work for an engineering company run by engineers. I also liked that Associated is an employee-owned firm."

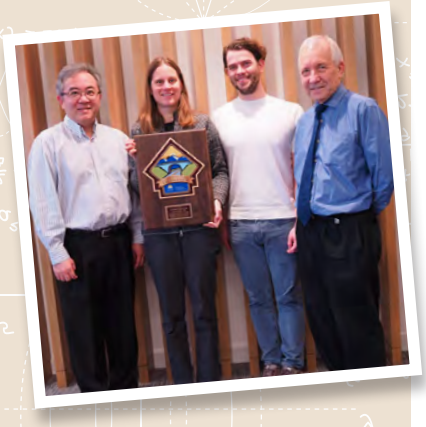
Katrin shares some of her memorable projects since joining Associated, including developing new standard specifications for the Government of the Northwest Territories; repairing the Summit Lake Overhead with ultra-high performance concrete; and being a trusted advisor to the City of Vancouver for their rehabilitation work on the Granville and Cambie Street Bridges.

> "I love the variety and fast pace of consulting. There is something new and unexpected every day. "

She also describes the Alexandra Bridge Rehabilitation on Highway 1 in the Fraser Canyon in BC as a career highlight. As the Engineer-of-Record on this iconic bridge, Katrin oversaw design and construction which included girder strengthening, bridge widening, and deck overlay.

Katrin tells us she enjoys bridge rehabilitation work as no project is ever the same. She is proud that rehabilitating bridges has the added benefit of emitting lower carbon and is more sustainable than new construction or replacement.

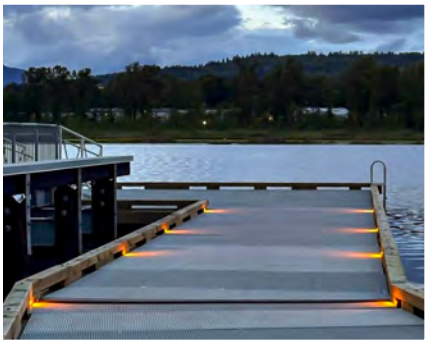
Managing a team of structural engineers in Vancouver, Katrin sees a key part of her role as supporting and growing every member in her group by fostering team camaraderie, understanding their individual abilities and interests, and guiding them to reach their potential. She says, "Mentoring and transitioning responsibility on projects to other team members is an important aspect of growing the capabilities of our group." She adds, "It's also important to mentor and support our young professionals to help them with their career growth. They are the future of the company." ***...continued on page 6***



Katrin (centre) with (l-r) Alfred Kao, Jason Dowling, and David Harvey receive BC Ministry of Transportation and Transit's Minister's Award for their work on the Alexandra Bridge Rehabilitation

Ecological Balance

Innovative solutions help to preserve and enhance a delicate ecosystem



Aerial view of the rehabilitated floating dock and boardwalks at Burnaby Lake Pavilion. Inset: Strategically placed lighting minimizes impact on wildlife.

Nestled in Burnaby Lake Regional Park in Metro Vancouver, the Burnaby Lake Rowing Pavilion is located in an environmentally sensitive habitat that is home to turtles, beavers, ducks, salmon, and other wildlife. As the ancestral home to the Halkomelem and Squamish-speaking First Nations, the area also holds archaeological significance.

The Pavilion's floating dock is the launch site for a two-kilometre, natural rowing course, and the facilities are also a cherished public venue for weddings and community events. Burnaby Lake also plays a critical role in the regional flood control system, acting as a stormwater runoff buffer.

Over decades of use, the grandstand and bridge pier (originally built on timber piles in the 1950s), fell into disrepair. Unsafe railings, failing concrete decking, deteriorating beams, and a lack of emergency egress made the structure unsafe and largely inaccessible to the public. Beneath it, gasoline-powered motorboats were stored under creosote-treated timbers, posing a significant fire hazard, and public safety and environmental risk.

The City of Burnaby retained Associated Engineering to assess and restore this iconic site.

Rehabilitation of the Burnaby Lake Rowing Pavilion required planning and attention to the construction approach and strategy to minimize disturbance to the surrounding wetland, wildlife,

...continued from page 5

Katrin Habel gives back to the industry to shape the future of bridge engineering

Katrin advises young professionals to obtain a broad foundation, and to be open to and ready for new experiences. She also shares, "Jumping over important steps may not hurt your career right away, but may over time."

In addition to client service and project delivery, Katrin enjoys involvement in corporate initiatives, participating on committees to foster our corporate culture, deliver our strategic plan, and leading a team to enhance ownership of staff work and roles.

Outside of the office, Katrin volunteers with industry associations and Scientific Committees. She participates in various committees with the American Concrete Institute and the CSA Group (formerly, the Canadian Standards Association) and delivers lectures for the Structural Engineers Association of BC (SEABC).

Katrin has published over 30 scientific and conference articles, and regularly presents at conferences, In 2017, she was co-chair of the International Association for Bridge and Structural Engineering (IABSE) Symposium. Recently, she was a member of the scientific committee for the Nordic Steel Construction Conference in Lulea, Sweden, where she also presented a paper.

Katrin shares that one of the early challenges she experienced as a volunteer was leading a code committee for a Fibre-Reinforced Concrete task force for the Canadian Highway Bridge Design Code. She says, "Earning respect as a leader in this area, working on a committee with many different personalities, and understanding their motivations was one of the most challenging things I have

and aquatic life. Project Manager, **Natalya Kucherenko**, explains, "Instead of conventional construction methods, which required heavy machinery and land-based access roads, our team adopted an innovative approach: non-propelled floats, towed by small boats launched from Still Creek were used to transport materials and facilitate both demolition of the old structure and construction of the new floating dock."

> Working closely with City staff, the Rowing Club, and other community stakeholders, our team embarked on a journey to preserve the Pavilion's cultural significance, while ensuring environmental stewardship and accessibility for all.

Wherever possible, we preserved and reused existing materials to maintain the site's ecological integrity. The main floating dock was replaced, the grandstand and bridge pier areas were reinforced, and new docking slips for emergency and safety boats were added. Additionally, we introduced two new 'nature walk' egresses to meet BC Building Code safety criteria while also enhancing public access.

Natalya tells us, "To further minimize environmental impact, we designed floating boardwalks that blend seamlessly into the natural environment. Built in modular sections to minimize construction impact on the environment, the boardwalks allow small mammals and birds to cross freely, preserving their natural movement patterns."

Executing the rehabilitation works while keeping the Burnaby Lake Rowing Pavilion fully operational was a complex challenge. The facility hosts year-round events, including summer camps and activities for children and other activities for the general public, making safety a top priority. Natalya says, "Our team collaborated to develop and implement a comprehensive construction staging plan to protect public safety, accommodate rowers, and ensure uninterrupted access."

Every aspect of the work was designed with environmental stewardship in mind. Strategic lighting was carefully designed in consultation with environmental and lighting specialists to minimize disruption to local wildlife and migrating birds. We installed lighting on the grandstand, bridge piers, and walkways. To maintain the ecological balance, no trees were removed, and the original structural footprint remained unchanged, preventing unnecessary habitat loss.

Beyond its recreational value, Burnaby Lake serves a vital function as a natural stormwater buffer, attenuating stormwater runoff and thus reducing the risk of flooding to the community. Even during atmospheric river events in recent years, the upgraded pavilion and walkways remained resilient to flooding, demonstrating their essential role in the park's overall stormwater management strategy.

The revitalized Burnaby Rowing Pavilion is once again a cherished destination for rowers, kayakers, anglers, nature lovers, and the public. It stands as a testament to thoughtful engineering, sustainability, and community spirit, offering an inclusive and accessible space where everyone can enjoy the beauty of Burnaby Lake.

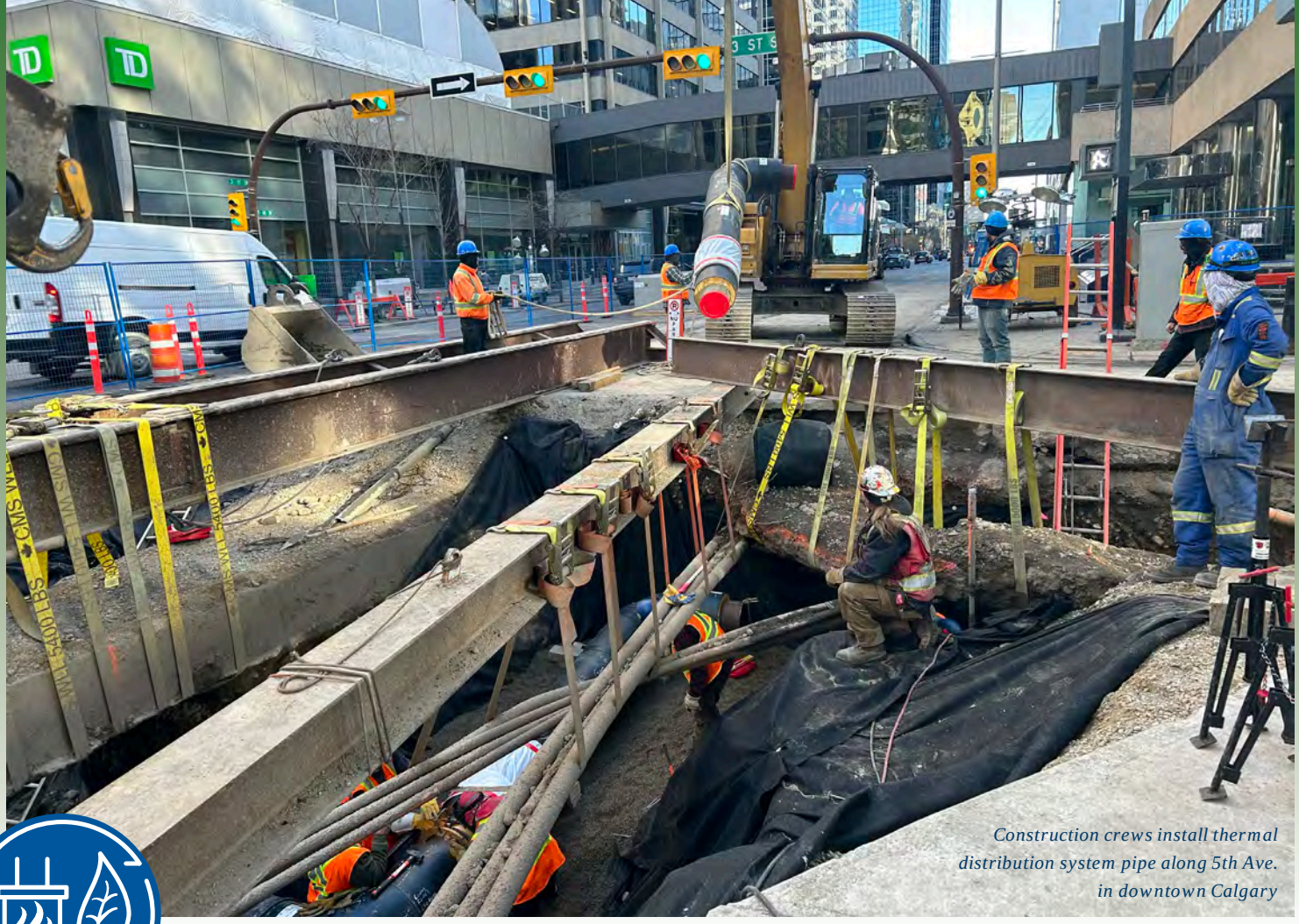
Katrin accepts award from CSA Group

Katrin and husband Adam Lubell enjoy cycling, hiking, and skiing in their free time

done in my career. The outcome - a new section in the code - was very rewarding, and this experience helped me be better in my role today."

Katrin has volunteered as a mentor at Women in Consulting Engineering events. As a senior professional, she reflects on some of her early career challenges. "Gaining respect as a younger engineer was draining. I am thankful for supervisors who supported me and stood up for me. I learned that there are situations where it is good to bring a more senior person to meetings, to make meetings more effective. I also struggled with workload and balance. I learned how to better manage my time and delegate, and when to say yes, no, or maybe later."

Outside of work, Katrin enjoys hiking, biking, and skiing. She also loves baking - mostly cookies and cakes.



Construction crews install thermal distribution system pipe along 5th Ave. in downtown Calgary

District heating relocates make way for Calgary's Green Line LRT

Calgary District Heating Inc.(CHDI) operates a district heating system in downtown Calgary, serving 22 buildings via an underground distribution system referred to as the Thermal Distribution System (TDS). As part of the proposed Green Line Light Rail Transit (LRT) expansion through downtown Calgary, enabling works were required from many utility companies in advance of the main construction contract for the new LRT alignment.

2nd Street SW in downtown Calgary was earmarked as the location of a new below-grade station proposed to service the Green Line LRT. One of the main TDS supply lines, consisting of two 350 millimetre, pre-insulated steel supply and return lines, ran directly down 2nd Street and serviced a high-rise building, Intact Place. The relocation of this TDS supply line was an essential part of the LRT enabling works.

In 2018, CDHI engaged Associated to identify an alternative route for the TDS line. Establishing a viable route was technically complex due to the underground congestion downtown and limited record drawings of existing infrastructure.

Through an extensive utility conflict review, including a desktop study and hydrovac program, Associated's team determined that the new TDS alignment would have to be re-routed and extended approximately 450 metres along three blocks. As multiple utility companies were undertaking similar adjustments, as well as the City for its own underground infrastructure, Associated was involved in extensive design coordination efforts, led by the City's Green Line team.

To facilitate these discussions, the City coordinated the development of a 3D model for downtown Calgary. All utility owners provided their alignments in software compatible with Navisworks (a 3D project review software) to allow all parties to more easily identify new underground alignments and potential infrastructure conflicts requiring resolution.

Project Manager, **Aled Jones**, tells us, "Our design team participated in regular multi-party model review meetings chaired by the City's Green Line team, carefully working through alignment challenges. Ultimately we obtained agreements from all affected third-party utility owners and the City on crossings and infrastructure separation requirements."

A feature of the TDS is its high temperatures. Heat is carried by water flowing under pressure at temperatures greater than 100 degrees Celsius. The thermal stresses this introduces to the steel distribution piping has to be mitigated.

Typically, expansion loops are added to the system to mitigate thermal stresses, enabling both the expansion and contraction of the pipe material as it is heated or cooled. Associated's team used Start-Prof stress analysis software to model the system and pinpoint locations of high stress requiring mitigation.

> We used 3D modelling to optimize utility relocation routes. Our mechanical team was engaged to update the Start-Prof stress model as our design changes were developed.

Project Engineer, **Alex Lowson**, tells us, "Each leg of a horizontal expansion loop is several metres in length, adding greatly to the challenge of establishing a viable utility line assignment. They also pose significant constructability challenges in tight urban environments, with contractors often needing to use cranes to lift and install the prefabricated U loops between existing ductbanks or pipeline infrastructure."

Another thermal consideration on the project was the effect of heat dissipation from the district heating pipes on electrical distribution infrastructure. Associated's team had to model the transfer of heat through the surrounding soils to demonstrate that it would not reduce the current bearing capacity of nearby cables.

Installation of the new lines along the three city blocks was completed in two phases. Approved construction windows were at a premium, due to the volume of Green Line utility relocates and the need to maintain traffic flows on these key downtown transportation corridors.

Construction continued throughout weekends with 24-hour shift work conducted for critical installations, such as at intersections and expansion loops.

Despite the extensive pre-construction coordination and field investigation work, some unforeseen buried infrastructure was encountered, as is typical in a downtown environment.

Responsiveness by Associated's project team to these findings was essential, coupled with care to confirm that field changes did not introduce unacceptable levels of thermal stress.

Construction started in August 2023 and was completed in September 2024.

> The CDHI line is now fully operational with water supplied to Intact Place to provide heat, as well as two additional buildings, First Canadian Place and the Stock Exchange Tower, along the new alignment.

Volker Stevin and Top Shelf Industries were the main contractors on-site.

Key members of Associated's team included **Aled Jones, Alex Lowson, Stan Reimer, Stephen Dallman, David Sorenson, Jason Ma,** and **Duane Strayer**.

Suspended U Loop on 5th Ave. in downtown Calgary

ViewPoints

Why the Pushback on Roundabouts?

A Change Management Perspective

Roundabouts are a proven solution to improve traffic flow and enhance roadway safety. Studies have consistently demonstrated that roundabouts reduce severe crashes, particularly those involving fatalities or serious injuries, compared to traditional signalized intersections.

Despite these benefits, there is often public resistance to their implementation. This pushback can be understood through the "lens of change management", which provides insight into why people resist change and how such resistance can be mitigated.

The Safety Benefits of Roundabouts

Before exploring the resistance to roundabouts, it is important to acknowledge their safety advantages. Traditional intersections with traffic signals or stop signs create multiple conflict points where vehicles cross paths, increasing the risk of severe T-bone or head-on collisions.

In contrast, roundabouts eliminate conflict points by directing all vehicles into a counterclockwise flow, reducing the likelihood of high-impact crashes. A traditional intersection (4-leg) has 32 conflict points, compared to a 4-leg roundabout that has only 8.

According to the Federal Highway Administration, roundabouts can reduce fatal crashes by up to 90% and injury crashes by 75% when compared to conventional intersections. Roundabouts also improve traffic efficiency by reducing wait times, fuel consumption, and emissions.

Despite these clear advantages, in many communities, the public expresses opposition when roundabouts are proposed.

Resistance to Change: Understanding a Generation's Perspective

Change, even when beneficial, is often met with skepticism and resistance. This is a key principle in change management, which examines how individuals and organizations respond to new processes or structures. The resistance to roundabouts can be attributed to several psychological and practical factors.

Familiarity Bias and Comfort with the Status Quo: Many drivers have spent years or decades navigating traditional intersections with stoplights and four-way stops. When a roundabout is introduced, it disrupts their long-held habits, creating discomfort and uncertainty. The familiarity bias—the tendency to prefer what is known and comfortable—plays a significant role in why experienced drivers resist change.

Perceived Complexity: Roundabouts require a different driving approach compared to traditional intersections. Yielding at entry points, merging into a continuous flow, and correctly exiting can seem more complex than simply waiting for a green light. Drivers who experience

Roundabout at RR20 and Townline Road in Niagara Region, ON

cognitive or physical changes affecting reaction time and decision-making might find roundabouts intimidating and confusing.

Lack of Exposure and Training: Many drivers learned to drive before roundabouts were common in the Canada and may have had little exposure to them throughout their driving years. New drivers may have little experience with roundabouts, as in most places, they are not common. Without direct experience, the rules of roundabouts can seem strange or counterintuitive. Unlike European countries where roundabouts are widely used, many Canadian communities are still adapting to them, making them feel novel and unfamiliar.

Fear of Increased Risk: While statistics overwhelmingly show that roundabouts are safer, perception often outweighs data in influencing public opinion. Some drivers may feel that the lack of clear stop signals and the constant movement of vehicles make roundabouts more dangerous rather than less. This fear can be exacerbated by negative anecdotes from peers who have had difficulties navigating roundabouts. This is relevant if you have ever had a PIC (Public Information Centre) to introduce a new roundabout at an intersection.

Physical and Cognitive Challenges: Some drivers may face challenges such as slower reaction times, decreased visual acuity, and reduced mobility. The need to judge gaps in traffic and react quickly in a roundabout can be daunting for those who struggle with these physical limitations.

Applying Change Management Principles to Address Resistance

Change management strategies can be applied to help drivers accept and adapt to roundabouts. The following approaches can ease the transition.

Education and Awareness Campaigns: Public information campaigns can help familiarize drivers with the benefits and functionality of roundabouts. Workshops, brochures, and online tutorials demonstrating how to navigate a roundabout can reduce fear and improve confidence.

Incremental Implementation: Rather than introducing multiple roundabouts at once, phased implementation allows communities to gradually adapt. Starting with smaller, lower-traffic locations can give drivers time to adjust before tackling larger, busier intersections.

A common theme in Ontario is to introduce roundabouts at the rural boundaries of a town or city. In these locations, typically speed is slower and driver habits naturally change.

Engagement and Community Feedback: Open forums and discussions help educate the public on roundabouts and give residents a voice in the decision-making process. By addressing concerns and incorporating feedback, authorities can reduce resistance and increase public buy-in.

Hands-On Training and Simulations: Driving courses or virtual reality simulations designed to teach roundabout navigation can be especially beneficial for drivers. These controlled environments allow them to practice and build confidence without real-world pressure.

Clear and Consistent Signage: Ensuring that roundabouts have clear, easy-to-understand signage can help alleviate confusion. Signs that indicate yield points, exit lanes, and direction of travel provide reassurance to those unfamiliar with the design.

Conclusion

Resistance to roundabouts stems from a combination of psychological, experiential, and physical factors. Change management principles suggest that education, gradual exposure, and inclusive community engagement can help ease the transition and build acceptance.

While roundabouts undeniably enhance road safety and efficiency, it is crucial to acknowledge and address public concerns through thoughtful implementation strategies. By bridging the gap between data-driven safety improvements and human behaviour, communities can successfully integrate roundabouts while maintaining public trust and confidence. AE

ABOUT THE AUTHOR

Mark Mascioli, C.E.T., LEL is Manager, Municipal Infrastructure in the Niagara-on-the-Lake office. He has over 20 years of design experience in complex civil infrastructure projects, including transportation road design and road reconstruction projects.

In addition to conceptual, functional, and detailed designs, Mark has experience in project management, construction administration, topographic surveying, and resident engineering.

Building Connections

New 170th Street pedestrian bridge connects communities in West Edmonton

Since the late 1980s, a pedestrian connection across 170th Street in northwest Edmonton allowed pedestrians to safely travel between the West Meadowlark neighbourhood and the Misericordia Community Hospital campus and West Edmonton Mall. However, in 2018, the elevated pedestrian crossing had to be demolished after a routine inspection revealed that severe deterioration made it unsafe to maintain the public crossing.

The City of Edmonton retained Associated to design a new pedestrian crossing. During the conceptual planning phase, an engagement plan reflecting the City's accelerated timeline was created. Associated's project team worked to develop and evaluate multiple options for the new crossing that would meet current and future needs for the community.

The vision for the project included several key goals, including safety and inclusivity; accessibility and connectedness; vibrancy and livability; sense of community; green and sustainable; celebration; and cohesive public realm. An important tool in stakeholder engagement was effective communication of the vision.

Early on, site constraints were a key factor in determining the superstructure depth for the pedestrian crossing, emphasizing the need to minimize the elevation that users would have to negotiate during their passage. As well, the structure needed to provide adequate overhead clearance for 170th Street.

Physical constraints also had to be determined, guiding consideration of utility conflicts, areas of potential environmental concern for risk of soil, soil vapour and/or groundwater contamination, and constructability constraints due to minimal land available.

Project Manager, **Eben Kruger**, says, "During the design phase, we thoroughly evaluated both trusses and through-type girders as potential structural solutions." Generally, truss-type structures carry loads through tension and compression, whereas girders rely on bending to carry loads. After careful analysis, it became evident that, for the specific span length at 170th Street, the truss option offered superior structural efficiency.

Consideration of constructability required a solution that could be largely constructed offline and lifted into place, minimizing the duration of impact to motorists and pedestrians using the corridor. The solution was an efficient new approach to a classic bridge structure, the Warren Truss.

The new pedestrian bridge design elegantly combines modern engineering standards with aesthetic sensibility, presenting a remarkable

Left: *bridge deck at twilight.* ***Above:*** *Aerial view of the truss being moved into place on Self Propelled Modular Transporters (SPMTs) during installation.*

improvement over its predecessor, while incorporating the openness of the original abutments as a distinct design element.

Technical Lead for the project, **Michael Paulsen**, explains, "The modern approach to an open abutment design doesn't just meet the current design standards, it sets a new benchmark. Its ability to fit with the existing landscape while offering advanced functionality showcases an exemplary balance between respecting the past and embracing the future."

> The project met guiding principles: accessibility, connectivity, sustainability, and community support.

Widening the pedestrian pathway fostered a more open and inviting environment, which naturally promotes social interaction, increases the presence of 'natural surveillance' from passersby, and thus reduces the potential for vandalism and other nuisance behaviours.

Well-designed lighting improves visibility at night, ensuring a consistent sense of security. The strategic use of landscaping further contributes to a safer environment, by maintaining clear sightlines, while also beautifying the space.

Universal accessibility was a crucial consideration in the design of the pedestrian connection, with its location close to both the Misericordia Hospital, Laurier House, as well as other seniors' facilities.

Accessed by individuals with varying degrees of mobility, incorporating universal design principles ensured that the bridge would be accessible and safe for everyone, regardless of their physical abilities.

In September 2023, the new bridge opened to the public. The resulting pedestrian connection with its contemporary interpretation of a classic truss design is destined to become a city landmark.

ONION LAKE, SK

GREENHOUSE BUILDING

13 staff members of our Saskatoon office helped the community of Onion Lake build a greenhouse that will be used for land-based learning and provide fresh produce.

EDMONTON, AB

OWL SPONSORSHIP

Our Edmonton office Applied Ecology Team has sponsored a Northern Saw-Whet Owl at the Beaverhill Bird Observatory as part of their Motus tracking research program.

WATERLOO, ON

GREAT FOOD SORT CHALLENGE

Eight Young Professionals representing our Kitchener and Vancouver offices participated in this event supporting the Food Bank of Waterloo Region. Sorting over 2,700 kilograms of food for the community, the team also raised $200 in donations for the cause!

LETHBRIDGE, AB

CANSTRUCTING A HEALTHY SERVING

Our Lethbridge team donated $3,656 to the food bank and their hard work was rewarded when they took home two awards: Most Cans and Best Meal!

CALGARY, AB

PING PONG FOR A PURPOSE

Richard Coldbeck (l) and **Rudy Chan** (beside Richard) from our Calgary office proved their prowess with the paddle. Not only did they win the competitive doubles final at this year's Ping Pong for a Purpose charity event in support of the Calgary Food Bank, but they also donated their $400 first place prize.

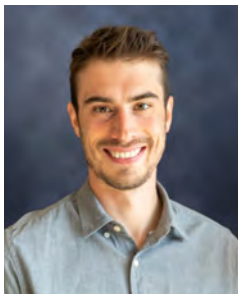
EDEN VALLEY, AB

VOLUNTEER TEACHING

Jorey Robin and **Abu Waraich** from our Calgary office recently made a trip to the Chief Jacob Bearspaw High School in Eden Valley where they talked to students and Public Works staff about private septic system management.

Lee Hang-Liu, P.Eng. has been appointed Division Manager, Infrastructure in our Calgary office. She has 22 years of experience in managing and delivering water, wastewater, and stormwater projects through all phases, including preliminary design, detailed design and construction administration.

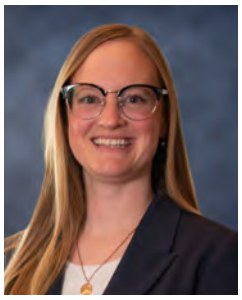
David Sorenson, P.Eng. has been appointed Manager, Mechanical & Hydraulic Modelling in our Saskatoon office. He has 15 years of experience as a Mechanical Engineer specializing in process piping, pump systems, HVAC design, and building service systems for municipal, commercial, and industrial clients.



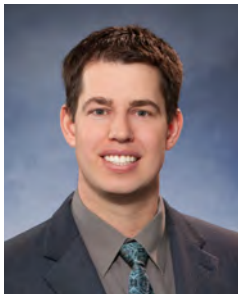
Dean Foster, P.Biol., R.P.Bio. has been appointed Manager, Applied Ecology in our Calgary office. He has 13 years of experience in characterizing lake and river/stream habitats, assessments of fish populations, and aquatic invasive species control for infrastructure, energy development, and pipeline projects.

Marta Green, P.Geo. has been appointed President of the BC Groundwater Association for 2025-2027. She is the first female President in the 55-year history of the BCGWA. Marta has over 25 years of experience in hydrogeology, water quality, and hydrogeological studies. Congratulations, Marta!

Eric Gaudet, M.Sc., P.Eng. has been appointed Division Manager, Water in our Saskatoon office. He has 22 years of experience as a Process Mechanical Engineering and Hydraulic Transient Analyst specializing in pump stations and pipeline/ forcemain projects.



Sarina Loots, M.Sc., P.Biol. has been appointed Manager, Environmental Planning in our Calgary office. Sarina has 17 years of experience providing clients with advisory services related to regulatory and environmental risks for transportation, water pipelines, water intakes, wastewater, and planning projects.



Ian Farthing, P. Eng., Project Engineer in the Prince Alberta office, has been appointed President of the Association of Professional Engineers & Geoscientists of Saskatchewan (APEGS) for a one year term beginning May 2025. Ian has 14 years of experience on municipal infrastructure and transportation projects. Congratulations, Ian!

John van der Eerden, M.Eng., P.Eng. has been appointed President of the Canadian Water Resources Association. John is a Past-President of the BC Branch of CWRA and has served in various roles at the national levels. He has 38 years of experience and Associated's Vice President, Water Resources. Congratulations, John!

Our Saskatoon office has moved!

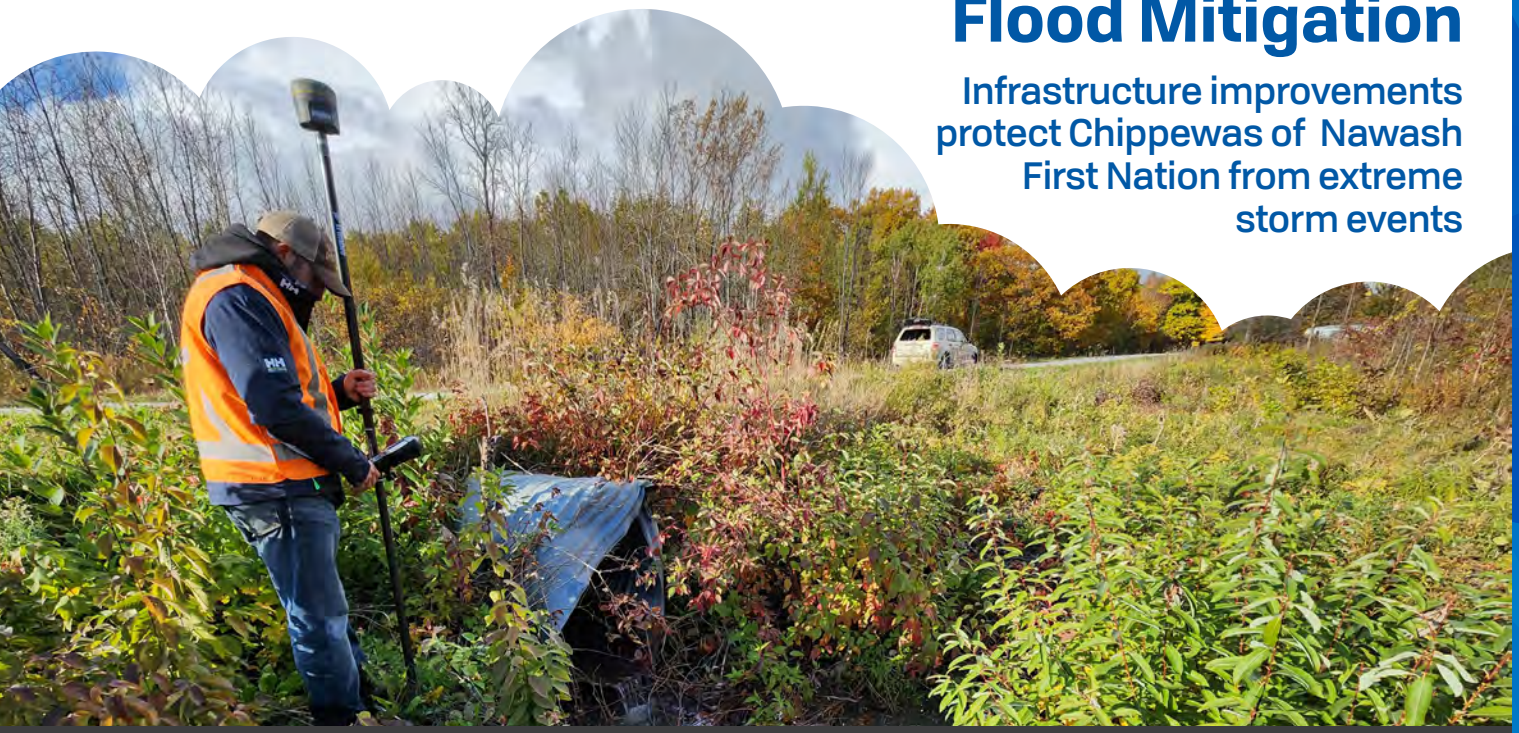
On June 23, our Saskatoon office moved to its new location at:

203 Wellman Crescent
Saskatoon, SK S7T 0J1

The phone number remains the same: 306.653.4969.

Flood Mitigation

Infrastructure improvements protect Chippewas of Nawash First Nation from extreme storm events



Project team collects survey data using GPS

In October 2016, the Chippewas of Nawash First Nation, located in Ontario's Bruce Peninsula, experienced a heavy rainfall event. This event caused significant flooding, including washouts and erosion that impacted vital roads and drainage systems in the community.

To mitigate future flood damage and protect public safety, the Nation sought to better understand how they could improve their community's resilience. In 2021, the Nation retained Associated Engineering to conduct a culvert analysis study to identify undersized or damaged culverts in need of replacement and support development of a Federal funding request to improve drainage related to roads, including culverts and ditches.

Project Manager, **Don McBrayne**, tells us, "Over the years, we've built a strong relationship with the Chippewas of Nawash First Nation, and have a good understanding of their infrastructure. This knowledge was key to pursuing the funding request on their behalf."

Our survey work included site data collection, as well as hydrologic and hydraulic assessments. Don shares, "We determined the existing conveyance capacities and which culverts should be prioritized for replacement, based on their condition and potential impacts to surrounding property and infrastructure."

Project team assesses damaged culvert

The Federal funding request was approved and Associated's team was subsequently awarded the detailed design, tendering, contract administration, and construction services for the project.

As the lead consultant, the project team completed the detailed design of 21 priority culverts to be repaired and/or upgraded and ditch regrading, as well as the installation of fibre cables and a watermain within the corridor. Where required, we designed culverts and ditches to handle increased capacity, considering future flood events, improved hydraulic layouts. We also designed new erosion and sediment control facilities. Water Resources Designer, **Hannah Murphy**, explains, "Ditch regrading will improve stormwater conveyance and reduce the potential for spilling and/or roadway overtopping."

Four culverts were identified as potential fish habitats and the culverts had to be redesigned for different flow management and pipe embedment. Hannah says, "Plunge pools are proposed at many culvert inlet and outlets for erosion prevention, as well as fish passage and prevention of debris accumulation." The durability of culvert inlets/outlets against ice flow damage was also considered.

Construction began in July 2025 with 20 culverts to be constructed in the base scope. Associated worked with the contractor to determine best materials, considering cost and time constraints, including the potential supply impacts arising from tariff uncertainty. Don explains, "Instead of polymer-coated corrugated steel pipe (CSP), that is more expensive but has a longer life-span, we specified a non-polymer coating, significantly reducing the cost and additional tariffs associated with polymer-coated CSP. Some of the savings are being used for other drainage improvements to further reduce flood risk."

Associated's key personnel on the project are **Don McBrayne, Hannah Murphy,** and **Kyung Ho Shin**.