



THE OFFICIAL PUBLICATION OF THE PUBLIC WORKS ASSOCIATION OF BRITISH COLUMBIA, THE ALBERTA PUBLIC WORKS ASSOCIATION, THE SASKATCHEWAN PUBLIC WORKS ASSOCIATION, THE MANITOBA PUBLIC WORKS ASSOCIATION, AND THE ALBERTA MUNICIPAL SUPERVISORS ASSOCIATION

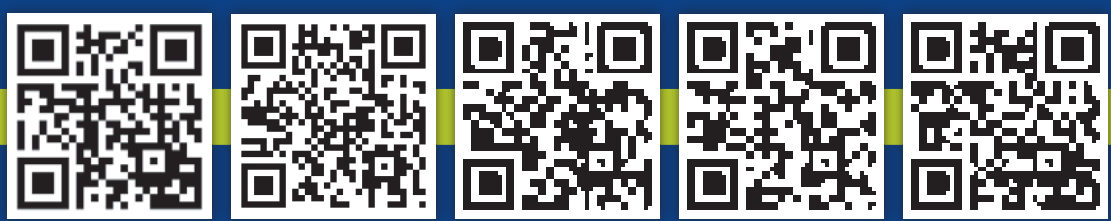
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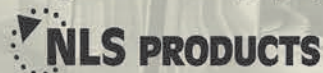
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On the cover: A new pedestrian plaza / greenspace in a historic section of Winnipeg closes off the street to traffic and creates a beautiful new outdoor area where students and community members can be free to gather in the heart of the city. To read more, turn to page 33. Photo courtesy of RRC Polytech.

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Membership

All members of a CPWA Chapter are members of the American Public Works Association (APWA). As a member, you share common goals, challenges, and solutions with other public works professionals throughout North America. To find out more on member benefits, go to www.apwa.net or www.cpwa.net.

“Our goal as public works professionals is to ensure our communities have the services that they both need and want.”

As I embark on my journey as the new President at the Canadian Public Works Association (CPWA), I first want to offer a sincere thank you and congratulations to both Rylan Wadsworth and Patty Podoborzny on their terms as CPWA President. Both Rylan and Patty are true leaders in both public works and in their respective Municipalities of Montreal-West, Quebec and Bruderheim, Alberta. The pandemic had an impact on both Presidencies, but they were both able to keep the CPWA Board of Directors energized and focused on the necessary public works advocacy efforts that we aim to achieve.

My role as President started at PWX in Charlotte, North Carolina, with a CPWA Roundtable discussion and the CPWA Luncheon where we presented awards for the National Public Works Week. What a gratifying way to start my term by being able to present these awards to very deserving communities.

Our goal as public works professionals is to ensure our communities have the services that they both need and want. Our role as the CPWA Board is to advocate to government to ensure that our community leaders have the right tools, funding, and ability to offer those services to the highest degree of proficiency every single day.

Our Board consists of representative from across Canada and we work together on behalf of small rural communities up to our largest Municipalities.

I'm looking forward to the next year as President of CPWA, and I encourage all our Canadian members of the American Public Works Association (APWA) to discover the CPWA Public Works Priorities and offer your comments or suggestions on our continued advocacy efforts on behalf of public works professionals in Canada. Reach out to any of our Board members at any time if you are interested in learning more about what we do or sharing with us how we can better help you in your communities.

Finally, I would be completely remiss to not also offer a sincere thank you to Anne Jackson, APWA Director of Sustainability and Canadian Government Affairs. Anne is the constant in our group that consistently and effectively keeps us focused and organized in our advocacy efforts.

Keep updated by visiting our CPWA website where the Ottawa Report is updated and posted during sessions of Parliament.

If you have questions, comments or just want to connect, I can be reached by email at Michael.walker@fredericton.ca.

Mike Walker

President
Canadian Public Works Association



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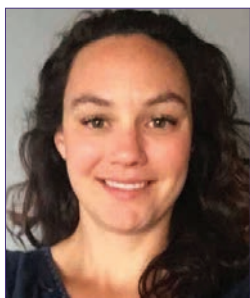
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You can learn more about the Public Works Association of British Columbia on their website: www.pwabc.ca.

A Message from the Public Works Association of British Columbia

My name is Meryl Ditchburn Heinz, and I am honoured to introduce myself to you as the President of the Public Works Association of British Columbia (PWABC) for 2023. Our chapter has an amazing group of board members and volunteers, and I'd like to first acknowledge the incredible work that they all do to keep this chapter moving. I'd also like to recognize past volunteers, board members, and executive on whose shoulders we stand.

I look forward to building on the successes we have had over the last couple of years under the guidance of Chris Anderson and Scott Lamont, who I'd like to take the time to personally thank for their mentorship and guidance throughout my career on the Executive of PWABC. This year, we hope to move forward with the strategic priorities we have laid out with emphasis on delivering some high-quality education to our membership. So, please stay tuned as our education committee is hard at work scheduling training and keep an eye on our training calendar at <https://pwabc.ca/events>.

In British Columbia, we recently wrapped up our 4th Joint Annual Conference and Tradeshow with the British Columbia Municipal Safety Association (BCMSA)! I truly enjoyed meeting again in-person and hope that many of you had a chance to take part in the conference. We are already in the planning stages for our 2023 Joint Conference and Tradeshow, which is scheduled for Penticton, September 26-27, 2023. I'd like to take this opportunity to send a sincere 'thank you' to the BCMSA, especially Christine Zielke for her and all of her organization's time and effort in putting together a fantastic experience for both of our associations. Great job to everyone involved!

At this time, I'd also like to take a moment to thank and recognize Scott Lamont, our outgoing Past President. Throughout his long tenure at PWABC, Scott has been a steady mentor, a voice for change through some difficult times, and a passionate advocate for education throughout the province. Although he will be dearly missed on the Executive, we look forward to his updates from the Canadian Public Works Association (CPWA) and his continued involvement with the Education Committee. Our Board and membership are grateful for Scott's volunteer time and efforts that he's put towards our Chapter, and we wish him all the best as he moves forward in his career. Thank you, Scott!

In 2023, the PWABC's Executive will have some familiar faces with Taryn Scollard as President-Elect and Chris Anderson as Past-President. We look forward to continuing to work with our existing Board members, consisting of Pat Miller, Alexander Christensen, David Best, Dylan Myers, Devon Aaroe, Kam So, Jason Adair, and Mafe Pinzon. The PWABC also looks forward to welcoming a new Board member and Treasurer at our forthcoming annual general meeting, so stay tuned for those exciting announcements!

As always, please don't forget that the PWABC wants to hear from you. If you have ideas, feedback or some volunteer capacity and want to help with one of our events in 2023, please do not hesitate to reach out to us at executivedirector@pwabc.ca.

Meryl Ditchburn Heinz

President 2023

Public Works Association of British Columbia



A Message from the Alberta Public Works Association

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Welcome to 2023 Alberta Public Works (APWA) members and friends. It's hard to believe that 2022 is over, and I am looking forward to seeing what 2023 has in store for us. Last year, we were honoured to have our 'Stronger Together' conference and trade show and our 23rd equipment Roadeo on Treaty 6 land Enoch Cree Nation at The River Cree Resort. This was our first in-person conference in the last couple of years and the attendees were very happy to be there along with the vendors at the trade show.

Then, in conjunction with our awards ceremony on September 30, 2022, we had a workshop to overview some of the legal issues for public works.

We also had another successful year with our Public Workers Supervisor Level 1, 2, 3 Course. Congratulations to those who have completed their Level 3.

National Public Works Week was May 15-21, 2022, and a shout-out goes to all the municipalities that participated this year. Congratulations to Cold Lake for winning the Canadian Public Works Association (CPWA) National Public Works Week award for communities under 25,000. I was honoured to accept their certificate of recognition on their behalf at the CPWA meeting that was at PWX in Charlotte, North Carolina.

While our brave snow fighters are out taking care of what 'Old Man Winter' is dishing out, our 2023 conference committee is working hard to deliver another excellent conference and tradeshow. This year's theme is 'From Boots to the Boardroom.' Along with the conference, we will also be having our 24th

equipment Roadeo and 2nd golf tournament. We are looking forward to seeing you all there May 29 to June 1, 2023.

We have a good year of training coming up, so mark your calendars. Public Works Supervisor Level 1 will be held February 21-24, 2023, in Red Deer. Level 2 in January is already full, and we are planning a second one for April or May of 2023. Level 3 will be in Coaldale, April 17-20. Watch our weekly eblast for more dates to come.

A Public Works Administrative Professional Workshop will be held in Canmore, March 23-24, 2023. This will be an excellent opportunity to build skills and a support network. National Public Works Week will be May 21-27, 2023, which is another great opportunity to recognize the importance of public works and showcase its efforts to your municipality. Watch the website and eblast for upcoming Idea Group Meetings.

Behind any good leader there is a group of fantastic people helping to carry the load. Nothing truer can be said about the people on the APWA board, both present and past. It has been an honour working with this crew of people and they will be lifelong friends. Patty, Joe, Chris, Mike S., Catherine, Bill, Winslow, Justin, and our momma bear that tries to keep us in line, Jeannette – thank you for being the people you are, and your commitment to the board and to the communities that you work in.

One last thing, make sure to take time to thank your frontline admin, this is the time of year that they deal with the not-so happy people.

Mike Haanen

President
APWA, Alberta Chapter

The Alberta Chapter was founded in 1979 to enhance the services of the APWA to the Alberta public works community and to improve the quality of public works products and services to Canadian citizens.



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The Saskatchewan Chapter strives to promote professionalism in the public works field and provide a network through which members can share and receive useful information.

A Message from the Saskatchewan Public Works Association

Once again winter has had a much earlier arrival than we expected, and crews have been out in full force to clear the snow in communities across the province. And temperatures hovering around 0 degrees always adds an unwanted wrinkle to the first snowfall of the year.

Weather events throughout the year seem to be more intense than they used to be, so being ready with a plan for these events has become very important as the weather events are similar, but different each time. As such, Public Works professionals must be resilient enough to handle whatever comes their way – and we certainly do!

The 'Stretching your Dollar' Road Maintenance Workshop was held on October 5, 2022, in Saskatoon, with 16 different communities attending sessions on grant writing, right of way controls, RM practices, and maintenance processes. The lunch sponsor was ConX Wireless.

We continued to host virtual events with a series of Lunch & Learns on Contracts with the second (201) event hosted on Nov 24, 2022. A big thank you goes out to the City of Regina for sharing your expertise as these events are very informative, and there are always some good questions and discussions afterwards. On Sept 8, 2022, we held a Lunch & Learn on Source Water & Treatment Technologies, with Delco Water providing the presentation to the 13 communities attending.

We are also in the final planning stages for our 64th Annual Conference & PWville, (tradeshow) themed 'Public Works – Ready & Resilient'. This theme rings true as we have to deal with anything that comes up (and there has been

a lot lately) and it reflects our commitment to not let that slow us down as our communities continue to depend on Public Works professionals. The conference will have a 0.6 CEU session, keynote speaker, and educational sessions with a variety of topics, as well as our tradeshow. Dates of the conference will be February 28 to March 2, 2023.

New for 2023, we are hosting Level 1 of the Public Works Supervisor course, which is based on the Alberta Chapter designation program that has proven to be very successful over the years. We will be hosting it in conjunction with the Annual Conference to give the attendees an opportunity to attend PWville, social events, and to network with peers.

Watch your email for more information on these events and remember that the discounted rate members receive at our combined yearly events pays for the annual cost of membership with the Saskatchewan Public Works Association (SPWA).

As you can see, the SPWA is endeavoring to bring our members and others in the public works profession greater value in educational and networking opportunities. We will also continue to promote professionalism in the public works field, advocate the essential role that public works plays in the quality of life, and promote it as a career choice for the work force of the future.

Visit our Chapter website at <http://saskatchewan.cpwa.net/> or contact our Chapter Administrator for more information and details about our upcoming SPWA events, or how to become an SPWA member.

Dale Petrun

Past-President, Saskatchewan Public Works Association

A Message from the Manitoba Public Works Association



The change of seasons is here and winter has now covered our province, which makes everything more challenging when driving and walking. So, who do we look to, to make our roads, streets, and sidewalks passable and safe? The answer is the hard-working Public Works Professional.

Recently, we hosted our very successful Mid Canada Snow Conference, where nearly 300 attendees took in presentations from experts in winter maintenance and emergency management, along with various panel discussions, a trade show, a Rodeo, and keynote speakers. The conference keynote speaker at the conference was Ian Hill, the CEO of the National Grassroots Media Corporation and its family of networks. These digital television and radio networks reach 185 million households across the U.S. and 3.1 billion mobile devices around the world. He is also the creator of 'The Changing Point.'

Ian's message challenged us all with the idea that everyone can make a big difference and be the change they want to see. He also spoke about the need to recognize the efforts of Public Works Professionals for everything they do, day in and day out. Through his discussion, Ian talked about the need for these professionals to be viewed the same as first responders. Often, they are first to clear roads and remove trees or debris so that police, fire, and ambulances can get through, so we need to identify them as a vital part of this group. And then, at the end of Ian's talk, he asked everyone to make a commitment for the next 30 days to improve life for others, or even themselves personally.

This commitment reads: "My commitment is to work to support all Public

Works Professionals through building strategic partnerships and working to providing more educational opportunities. I believe that organizations like our chapter play a significant role in prompting Public Works and lobbying governments, cities, and municipalities to recognize their work. We all need to stop and say thank you."

One of the initiatives our board is already discussing is how our chapter can build for next spring's Public Works Week. This should be a huge opportunity for everyone to send a message of support and, over the next few months, we will be putting together a plan to make the 2023 event much larger with greater participation. Along with the plan, we will be meeting with the province, cities, and municipalities to create a greater awareness of our chapter and how we can support them.

The conference has given the chapter great visibility, with many attendees asking about becoming members or, at the very least, what are other events they could attend. The board needs to engage this energy to build our membership, and continue showing the value to Public Works Professionals.

Another issue hitting everyone is hiring qualified people for their operations, and everyone is facing the retirement of their long-term staff and the highly competitive environment for the few workers that are available. Associations like ours can play a key role in providing resources and partnering with cities, towns, and municipalities on how this pool can be built.

I hope you enjoyed the holidays and that everyone has a safe winter!

Randy Pitz, CMC

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Did you know that Manitoba is the longest serving of the Canadian Chapters and has been providing a forum for practitioners since 1955? We actively support our membership, the public, and policy makers to collaborate and maintain healthy communities throughout the province.



A Message from the Alberta Municipal Supervisors Association

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As I write this message, construction season is winding down and the planning for next year's infrastructure projects has begun across Alberta. Hopefully your municipality was able to complete all of your 2022 budgeted capital projects over the summer before the snow started to fly in the fall.

Public works is an essential service, with teams that work weekends, holidays, and sometimes even during the night to ensure communities have fresh water, wastewater systems that function, and roads that are clear and safe. A big kudos goes out to all the public works staff – along with their families – who sacrifice every day to keep communities functioning through all four seasons.

For those of you who are new to The Roadrunner magazine and may not know, the Alberta Municipal Supervisors Association (AMSA)'s mission is to unite members towards individual development, improved service to their municipality and the public, and to improve the members' knowledge related to their role in public works. AMSA provides a forum for exchange (both online and in person at conventions), for the development of innovative ideas, as well as to offer various professional development opportunities.

I do encourage you to visit our website www.amsapw.ca and learn more about AMSA's more than 40-year history of advocacy, sharing best practices, and training.

Every year, AMSA hosts both a spring and fall conference at the Edmonton Convention Centre with various presentations and guest speakers. This past fall, Jeff Mowatt presented to the group on managing priorities, and members enjoyed the keynote speaker, Quick Dick McDick, for some leadership downtime. Coming up in the spring 2023, we have Gregory Offner scheduled to arrive in Canada to present 'The Performance Agreement.' Convention attendees also review new legislation and technologies, as well as examine management strategies beneficial to both seasoned public works professionals and newcomers to the field.

On behalf of AMSA and its 150-plus members, I am sending my heartfelt thanks to our dedicated group of executive and directors and to the association's many sponsors. Sponsor contributions help sustain our operations and allow us to continue to provide two conventions every year, at no cost to members.

Shaune Kovitch

AMSA President
Alberta Municipal Supervisor' Association

AMSA's mission is to unite members towards individual development, improved service to their municipality and the public, and to improve the members' knowledge related to their role in public works. AMSA provides a forum for exchange, both online and in person at conventions, and the development of innovative ideas, as well as offers various professional development opportunities. At conventions, AMSA members review new legislation and technologies, as well as examine management strategies beneficial to both seasoned public works professionals and newcomers to the field.

Managing

the

Workplace

By Chris Anderson,
AScT, CPWP-M

This article was originally published in the APWA's October 2022 Reporter. It is reprinted with permission and has been edited for length.

As directors, managers, and supervisors in the world of public works, we all recognize that our jobs can often be unscripted and reactionary. But in this article we aren't going to focus on the 'emergency management-type' components of our roles, rather we will take a quick look at some of the basic tools that we, as public works leaders, use and implement as we manage our workplace on a day-to-day basis.

Here's a snapshot of three tools that will help you manage your unionized workplace:

Collective Agreement / Contract Administration

The collective agreement is typically the backbone of a unionized environment. It sets out a full range of instructions or 'rules of the game,' so to speak. A collective agreement can speak to items such as management rights and discrimination, strike and labour relations, bargaining, personnel files, grievances, filling vacancies, seniority, breaks, hours of work, overtime and

premiums, vacations and absences, pension, severance, safety, wages, etc.

This list can be much longer depending on the organization and collective agreements aren't always perfect, but a collective agreement is one of your basic management tools. Get to know the collective agreement well as you will likely use it and reference it regularly. Knowing your agreement well will help you be as consistent as possible when it comes to the contract administration of your team.

Whether it be for an easy or tricky situation, the collective agreement is probably your starting point for every union related situation that you might have to deal with. The language within this document should hopefully help guide you through the ups and downs of managing your workplace in a consistent and fair manner.

Job Descriptions

Another key tool that is used in a unionized environment are the job descriptions. If you are a public works leader, you'll want to pay particular attention to these important

documents. Job descriptions can be prepared and adopted (in consultation with your union) for each unionized role in your organization. Job descriptions will set out the skills, abilities, tasks, requirements, and level of pay for the various roles on your team. Clear job descriptions should hopefully provide you with the clarity you'll need to help manage your workplace.

Safety Policies / Procedures

All employees of your organization have the right to a safe workplace and safety is key for us as public works professionals. As stated in the American Public Works Association's Blue Book - *Public Works Administration (2008 version)*, "Safety is a basic human need, second only to the basic human need for the food, water and air that is needed to live. It should be the primary focus of any public works organization."

As we all know, there are hundreds, if not thousands, of potential hazards that our teams can face on a day-to-day basis while serving our communities. To manage your workplace safely, be sure to create, implement, use, and update

your safety policies and procedures. These written tools will help set the expected and accepted standard for safety in an organization. Having a strong set of safety related policies and procedures is another great tool in managing your workplace and doing so safely.

Hiring, Onboarding, and Retaining

When hiring new team members, I often remember the words I heard from a now-retired HR Director who often liked to say, “We are looking for the right fit, at the right time, for the right position.” She also used to say that openings with our organization are “like little golden nuggets – we need to be very careful with whom we give them away to.”

These two statements have stuck with me through the years as small reminders of the importance of staffing the critical openings and roles on our teams. First, you’ll want to hire the right person, then onboard them to your organization’s expected work philosophies and goals, and then retain them so that they remain on your team for years to come.

Here are some more suggested tools for your consideration:

- **Hiring:** You have such a small window of time during the hiring process to really figure out if this person in front of you is the right fit for your organization. Yes, they may meet all of the

technical abilities of the vacancy, but are they the right person for your team? Maybe you should choose the greener applicant who has an amazing attitude but comes with less experience than what you had hoped? So, when it comes to staffing, really do your best to try to ensure that you are hiring the right person to begin with.

- **Onboarding:** Keep in mind that your new hires will have lots of great energy and ideas when they are getting started with your organization. This energy is awesome and can be contagious, so be careful not to stifle that enthusiasm as the new hire will likely contribute positively to your team. But that said, the onboarding phase of staffing your team is important and there will be a number of items that your new team member will need to learn and understand about your organization. This is the time to mould your new employee into part of your existing team, while being open to the fresh ideas that the new hire might bring to the team. If you’ve done your hiring correctly, onboarding should flow smoothly, and you will be well on your way to a successful relationship. If you have not hired well (and we know this happens), and when you are in that unionized environment, do not let the probationary period pass you by. Also, if you feel like the probationary period

should be extended, it’s probably never going to work out with this hire, and it is likely time to part ways.

- **Retaining:** Sometimes retaining your team can be the easiest part of staffing, or one of the most difficult. Whether it be a good or bad situation at work or at home, finances, life change, you name it, you just never know what someone might be going through. All of these factors and more will play into the retaining phase of your staffing. If you’ve got a great work culture, and a highly productive and engaged team, odds are that retaining that team should be relatively easy. People want to be a part of something like this. It is likely that in this type of scenario, you allow for and support empowerment. Do not be shy to empower your people. Just be aware, your retention efforts could all be for not, pending the individual or the next jurisdiction over. Sometimes change is inevitable.

Good luck with staffing your team! It’s a challenging but rewarding process that is ongoing. ▶

Chris Anderson is the Public Works Manager for the City of West Kelowna and current Past-President of the British Columbia Chapter. Chris also serves on the APWA’s Leadership and Management Committee.

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Ensuring Worker Safety When Temperatures Drop

By the Canadian Centre for Occupational Health and Safety (CCOHS)

Jermaine is part of a roadwork crew repairing a sink hole on a provincial highway. At the start of his workday, the temperature on the job site was 1°C. Over the course of the morning, however, winds have picked up, snow has fallen steadily, and the temperature has dropped to -7°C.

Jermaine is eager to complete the job as quickly as possible so he can go home to relax. He quickens his pace, and – for a while – he feels warmer because of the more intense physical activity. But as he begins to sweat the warmth turns to dampness, and then cold. He feels mentally foggy, and his gloved hands are becoming stiff. It takes him a minute to realize that his co-worker Sumit is trying to get his attention.

Sumit walks over. “Jermaine, you, alright?”

“Yeah Sumit, I think so. I worked up a bit of a sweat and the cold is just started to get to me a little.”

“Let’s get you inside the warming station to dry off and take a break. In weather like this, it’s important to work at a pace that keeps you dry.”

In Canada there are a number of industries in which workers are outside when the temperature drops. To prevent injuries from working in the cold, there are several important factors to consider before any work begins.

Understanding the risk factors for cold injuries

Accurately assessing the risk of exposure in cold weather involves more than air temperature – it’s also important to understand what impacts our bodies’ response to cold.

We tend to feel colder as wind speed increases. Wind chill factor is a measurement of the heat loss rate caused by exposure to wind, expressed in Celsius or Fahrenheit. It can be used as a general guideline for determining clothing requirements and the possible health effects of cold. Humidity (wetness) also has a big impact on the body’s response to cold because water conducts heat away from the body.

Wearing suitable personal protective clothing and taking regular breaks in a warm place can help address the risks when working in the cold.

Dressing for the elements

As a general rule, workers should be provided with or required to wear protective clothing any time they’re working in temperatures of 4°C or lower (different jurisdictions may have their own requirements). Garments should be selected to suit the temperature, weather conditions (e.g., wind speed, rain, ice), and the level and duration of activity so the amount of heat and perspiration generated while working can be regulated. Select the right gloves, hats, socks, footwear, and face and eye protection for specific cold working conditions.

Multiple layers provide better protection than a single, thick layer as workers can open or remove a layer before they get too warm and start sweating. Wearing layers also accommodates different levels of activity and changing temperatures and weather conditions.

Outer layers should be larger than inner ones to allow for airflow and sweat wicking. Otherwise, inner layers will be compressed, and their insulation properties reduced. Cotton is not recommended as it tends to get damp or wet quickly and loses its insulating properties. Wool and synthetic fibres still retain heat when wet.

Employer responsibilities

Before work begins, train managers, supervisors and workers on safe work practices, re-warming procedures, proper clothing practices, and what to do in case of emergency. Cold injuries can impact mental alertness so have a buddy system in place where workers can look for signs of injury in each other. Show them how to recognize the different symptoms of frostnip, frostbite, chilblains, immersion foot (trench foot), and hypothermia. At least one employee trained in emergency response for cold injury should be available at all times.

The risk of cold injury can be reduced by choosing equipment with thermal insulating materials and tools that can be operated with gloves. Allow workers time to adjust to the changing weather conditions. Set the expectation that the pace of work should keep workers warm, without causing them to sweat. For continuous work in below-freezing temperatures, schedule regular breaks in a heated area so that workers have a chance to warm up, adjust clothing layers, and conserve body heat and energy.

Make sure a supervisor or manager is regularly monitoring changing weather conditions. In outdoor workplaces with an air temperature below the freezing point, both air temperature and wind speed should be recorded. Consult your jurisdiction for specific guidelines on working in the cold. You can also refer to the Threshold Limit Values® for Cold Stress provided by the American Conference of Governmental Industrial Hygienists (ACGIH).

Lastly, like in the case of Jermaine's, consider implementing a 'work warm-up schedule,' similar to the one developed by WorkSafe Saskatchewan. The schedule shows the warm-up breaks required for working in cold conditions. The schedule allows additional breaks for workers as the wind velocity at the work site increases and/or the temperature drops.

Inside the warming station, Jermaine has taken off his waterproof outer layer and is drying off near the heat source. The site supervisor, having checked Jermaine over for symptoms of cold injury, commends Sumit for his quick reaction.

Jermaine is feeling more alert. "Thanks for looking out for me, Sumit!"

"We look out for each other, Jermaine. Happy to help." ▶

The Canadian Centre for Occupational Health and Safety (CCOHS) promotes the total well-being

– physical, psychosocial, and mental health – of workers in Canada by providing information, advice, education, and management systems and solutions that support the prevention of injury and illness. Visit www.ccohs.ca for more safety tips.

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Shift into Winter:

By Paul Adair, Staff Writer

Driving for Winter Roads

Driving is often one of the riskiest activities Public Works employees perform while on the job. In British Columbia alone, there are an average of 20 deaths every year and more than 1,400 people are injured or off work annually from work-related vehicle crashes in all occupations.

This is why road safety needs to be part of any workplace safety program, especially during the winter months where road conditions are often less than ideal.

For more than a decade, Road Safety at Work – which is managed by the Justice Institute of British Columbia and funded by WorkSafeBC – has worked to improve the safety of people who drive for work or work at the roadside. As part of its mission, the organization coordinates two seasonal awareness campaigns, *Cone Zone BC* (to protect roadside workers) and *Shift into Winter*.

Given the snow, rain, fog, and reduced daylight, winter driving in B.C. can be dangerous if you're not prepared. The *Shift into Winter* awareness campaign, supported by the Winter Driving Safety Alliance, helps employers and drivers find the answers they need to help safely drive the roads in winter.

"Even though October this year was unusually warm, and people were in shorts and T-shirts right up until the end of the month in most parts of the province, there is no question that winter has now arrived here in British Columbia," says Trace Acres,

program director for Road Safety at Work. "The *Shift into Winter* campaign helps raise awareness of the hazards associated with winter driving and, ultimately, reduce incidents of workplace injuries and deaths."

Road Safety at Work suggests the following steps to ensure you're ready to shift into winter:

Know before you go

The *Shift Into Winter* campaign recommends drivers 'know before they go,' by checking out the local weather forecasts and road conditions at www.DriveBC.ca prior to hitting the roads. Drivers should plan to give themselves extra time and expect to arrive later than they would have normally in fair weather and, if the conditions happen to be treacherous, they will need to determine whether or not the drive is even worth it.

"Is it a trip that you need to make, or can you postpone it, or can you do your business in another way?" asks Acres. "In the winter, you really need to think more about safety than you think about getting where you need to go, and this can be as simple as changing your attitude from, 'Okay, I need

to get there as fast as I can' to, 'I need to get there as safely as possible.'"

Winter tires keep you on the road

All drivers need to understand the road conditions on the routes they regularly drive, and then equip their vehicle for those conditions. Provincial laws in British Columbia require that vehicles use winter tires on most highways from October 1 through April 30 (March 31 for some locations), especially through the province's cold mountain passes and in areas with high snowfalls.

Legal winter tires need to have at least 3.5 millimetres of tread depth. Tires with the three-peaked mountain and snowflake symbol provide better traction on snow and ice and shorter stopping distances in cold temperatures and in severe winter weather. All-season tires with the M+S (Mud and Snow) symbol are also legal. Chains on summer tires are not a substitute for winter tires.

See and be seen

Visibility is another concern during the winter months, especially through the longer nights and when the snow is flying.

Before heading out, drivers need to make sure their windows are clear of frost and fog on the interior and, outside, ensure all snow is swept from the car, including from the roof, headlights, and scraped from the windshield.

“We actually recommend that you also change your windshield wipers before winter to wiper blades that are designed for winter driving,” says Acres. “And because there is less daylight driving, always make sure that your headlights and taillights are clear and functioning so that you can see – and be seen – on the road.”

Be well equipped

It is also wise to always have a well stocked emergency kit somewhere in the vehicle, and this is especially so in the winter when there is a greater chance of sliding off the road or getting stuck in the snow. The

Shift into Winter – Winter Driving Survival Checklist recommends that all drivers carry the following items during the winter months in case of a breakdown:

- Windshield scraper and snow brush
- Extra windshield washer fluid
- Flares and matches or lighter
- Tire chains and gloves
- First aid kit
- Shovel and traction mat, sand, or kitty litter
- Flashlight and extra batteries
- Battery jumper cables
- Spare tire, wheel wrench, and jack
- Extra clothing and footwear
- Fully charged cell phone and charger
- Blanket or sleeping bag
- Candles
- High energy food
- Empty can for melting snow
- Tow rope

Be mindful of your surroundings

Road Safety at Work reminds all winter drivers to slow down, ease up on braking and accelerating, and give space to others who are sharing the road. Try to drive below the posted speed limit and maintain a safe distance (at least four seconds of distance) between you and the vehicle ahead of you – this is especially important when passing those out working in the cold.

“It’s critical to ensure that workers who are working at the roadside have a safe place to do their jobs,” says Acres. “Anytime you come upon a vehicle with flashing lights in British Columbia, it’s the law that you have to slow down when you pass them, particularly in the winter when the road conditions are worse. Drivers should always make sure they are doing everything possible to keep roadside workers safe at work.”

Look familiar?

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Differing Site Conditions:



Who Takes the Risk?

By Sonia Sahota & Marcela Ouatu, Civic Legal LLP

The conditions of a work site are an important consideration for most construction projects. Changes to the site conditions that have not been anticipated by a contractor may lead to delays and increased costs that may not be recoverable from the owner. Claims resulting from differing site conditions (DSC) may significantly impact project cost and schedule, particularly if risks associated with DSC are not clearly and appropriately allocated. So, it is important to understand who takes the risk for unforeseen site conditions and what contractual clauses affect the allocation of this risk among the parties.

The default position under the general principles of construction contract law relating to contractor's risks as to DSC is unfavourable to contractors. Unless the contract specifies otherwise, the risk of DSC rests on the contractor, who is required to satisfy itself as to the conditions of the site for the project. Accordingly, it is for the contractor to determine the potential adverse site conditions and price the work accordingly to account for the risk of such conditions.

The parties to a contract are free to change the default allocation of risk for DSC and place it either on the owner or the contractor. Construction contracts may include a "changed site conditions clause,"

pursuant to which a contractor is entitled to make a claim for additional compensation when the site conditions encountered on site are materially different from those anticipated by the contractor or that were not reasonably foreseeable, provided the DSC affect the contractor's costs. Such clauses shift the risk of DSC from the contractor to the owner.

Owners may seek to contractually shift responsibility for site conditions onto the contractor than would otherwise be the case under contracts containing a "changed site conditions clause." For example, contractual provisions that allocate more risk to the contractor for site conditions may require the contractor to undertake their own investigation of the site to confirm the site conditions before submission of the tender (a "full investigation clause"), or may exclude the contractor's reliance on the owner's representations regarding the site or on geotechnical reports and other documents and data from engineering consultants provided by the owner to the bidders (a "non-reliance clause").

Such an approach at shifting responsibility onto the contractor raises two concerns for owners. First, requiring a contractor to accept the risk of conditions at an owner's property, particularly when there is insufficient information about hidden conditions and the contractor is not entitled to rely on the information provided by the owner about the site, may result in higher contingencies factored into the price to cover the risk. Second, the case law indicates a tendency for courts to override the contractual provisions that place on the contractor the risk of site conditions to find in favour of the contractor, in certain circumstances.

Courts sometimes recognize that clauses, such as a "full investigation clause" or a "non-reliance clause," may not protect an owner from the consequences of misrepresentations made to the contractor and may not exclude a warranty regarding the accuracy of the information supplied by the owner regarding site conditions.¹ The courts consider that it would be unreasonable to expect a bidder to do detailed investigations during the short period of time allocated for the submission of tenders.² Such an approach of requiring the bidders to incur the time and expense of completing the same investigations would be both impractical and inefficient.³ Further, there is legal authority supporting the proposition that where it is reasonably foreseeable that a bidder would rely on the information provided by the owner, and where there is no practical alternative

source for that information, reliance by the bidder on that information would not be excluded by a "non-reliance clause."⁴

In addition, courts have imposed a duty on owners to fully disclose information that is available to the owner and its consultants and that is vital to the contractor regarding site conditions in spite of a "full investigation" and "non-reliance clause."⁵ Accordingly, despite the presence of such clauses, contractors may be found entitled to rely on information provided by the owner, and an owner may be found liable for any negligent misrepresentation regarding the information provided or for any tortious acts of not providing information which it had available, and which would have impacted the bids submitted in the tender process.⁶

However, this does not exclude a contractor's obligation to ensure it has undertaken an adequate review of the information provided by the owner or its consultants. A contractor cannot argue that there is a change in soil conditions from those reasonably assumed to exist at the time of making its bid, when a summary review of the consultant's reports from a qualified professional would have been sufficient to identify the issues.⁷

Key takeaways

Differing site conditions may pose significant challenges for construction projects and for the party on which the responsibility for them falls. Both the owner and contractor should carefully consider the contractual

allocation of this risk and, based on the information available regarding the nature of the site, try to place the risk on the party most equipped to undertake that risk. ▶

This article is intended for the general information of organizations in British Columbia. If your organization has specific issues or concerns relating to the matters discussed in this article, please consult a legal advisor.

Marcela Ouatu is an Associate Solicitor and Sonia Sahota is a Senior Solicitor and current managing partner at Civic Legal LLP, a British Columbia law firm with expertise in municipal law, land development, construction, procurement, and complicated contract matters. Visit www.civiclegal.ca for contact and additional information.

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Nitrites &/or Molybdates may be found in CC's	Nitrite CC / ELC	4
Nitrite 0-3200 ppm	Molybdate CC / ELC	5
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328-071ELC, 328-171ELC, 328-OAT-ELC, 4106, 4107, 40132, 40240, 80200, 80240,
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Upcoming Events

PWABC Construction Inspection Virtual Workshop

January 24-26, 2023; January 31 to February 2, 2023; and February 7-8, 2023

PWS Level 1 Institute Course

February 21-24, 2023
Red Deer, Alberta

SWPA PWS Level 1 Institute Course

February 27 to March 2, 2023
Saskatoon, Saskatchewan

SPWA 2023 Annual Conference & PWville

February 28 - March 2, 2023
Saskatoon, Saskatchewan

AMSA Spring 2023 Convention

March 21-22, 2023
Edmonton, Alberta

Public Works Administrative Assistant Workshop

March 23-24, 2023
Canmore, Alberta

Manitoba Good Roads Association Judging Competition's Annual Awards Banquet

April 3, 2023
Winnipeg, Manitoba

2023 North American Snow Conference

April 16-19, 2023
Omaha, Nebraska

PWS Level 3 Institute Course

April 17-20, 2023
Coaldale, Alberta

National Public Works Week

May 21-27, 2023

Alberta Chapter's Equipment Rodeo, Snow Show, Conference, Training, and AGM

May 29 to June 1, 2023
Edmonton, Alberta

PWX 2023

August 27-20, 2023
San Diego, California

5th Annual PWABC & BCMSA Joint Conference

September 26-27, 2023
Penticton, British Columbia

Focus on Public Works

The American Public Works Association presents expert-led online education, trending technologies, resources, networking, and learning opportunities each month. Visit their website for the upcoming schedule.

Construction Inspection Virtual Workshop

This program brings the APWA Construction Inspection Manual to life with the help of expert instructor, Mario Maciel. The workshops are designed for construction inspectors of various experience levels who are looking to learn more about all facets of public project inspection, including the roles and responsibilities of an inspector, legal / risk management and regulatory issues, documentation and communication, and project close-out.

Offered over three weeks, each class session are two hours in duration (7:30-9:30 am PST), allowing for instructor interactions, peer networking, and online discussions.

Hosted by Zoom, the virtual training dates are:

Week 1: January 24-26, 2023

Week 2: January 31 to February 2, 2023

Week 3: February 7-8, 2023

Course hours run 7:30-9:30 am PST

Please complete the registration form by visiting www.pwabc.ca and follow the Training Calendar links, or click on https://events.eply.com/ConstructionInspectionWorkshop_1.



Meet-a-Machine

On September 17, 2022, at the InnovationPlex in North Battleford a free event for families to attend provided the opportunity to 'meet' the 'machines' they see around the community and get a chance to explore and interact with the machines.

The City's Fleet and Building Maintenance Department provided a Zamboni ice resurfer, Global street sweeper, Lee Boy alley grader, John Deere wheel loader, John Deere loader/backhoe combo, Bobcat skid-steer and Ford bucket truck with an Altec lift. Staff wore their high-visibility PPE and set out cones and 'Worker Present' signs around the equipment.

"There were lots of smiles from the kids (and some parents) when they got to sit inside the cab of the equipment, touch the controls, and blow the horn," says Fleet and Maintenance Manager, Seton Winterholt. "It was interesting to see some City staff attend with their kids and see their pride when explaining that this is the equipment that they operate when they are away at work every day."



MGRA Gravel Courses

The Manitoba Good Roads Association (MGRA) was formed in 1909 to promote the development of roads in Manitoba. In cooperation with community colleges and various government departments, MGRA provides a variety of seminars and courses for municipal workers throughout the year, with an emphasis on the improvement of roads in Manitoba.

Annually, MGRA hosts two Gravel Courses in two locations. Supervisors and grader-operators will find the information helpful in understanding what it takes to maintain a gravel road. This year the dates will be:

March, 2023

The Mun of Westlake-Gladstone and the RM of Wallace-Woodworth

And an additional half-day course on April 4, 2023, Winnipeg, Manitoba

Members receive a reduced rate to enroll in these courses and suggestions for future courses are always welcome.

Write for *The ROADRUNNER*

If you have an interesting story to tell that would be of interest to public works professionals in Western Canada, please reach out to ssavory@matrixgroupinc.net.

We are looking for HR Reports, Safety Reports, Investment Reports, Legal Briefs, Community Reports, and Tech Talks for our 2023 editions! *All articles are subject to approval.*



Contracts 201

After its successful ‘Contracts 101 Roundtable,’ the Saskatchewan Public Works Association (SPWA) partnered with the City of Regina and hosted ‘Contracts 201 Roundtable’ virtually on Thursday, November 24, 2022. It was very well attended with over 20 participants from 18 different communities!

Our attendees reviewed what was learned in Contracts 101, including recapping the components of Contract Process and the different stages of contract. They also heard about different types of contracts, contract management, roles and responsibility, amendments in the contract / change orders, vendor performance evaluation, and contract closures.

Thank you to all those who attended our second session in the virtual Contracts Writing & Management Roundtable Series! We are grateful to the City of Regina for presenting and for they, and the City of Saskatoon, for providing subject matter experts.

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25 Years –
Kevin Cymbaluk



20 Years –
Brian Anderson
and Bryce Cooke



AMSA 2022 Fall Convention

At the Alberta Municipal Supervisors Association's (AMSA) fall convention November 8-10, 2022, long-serving members were recognized for their commitment to the association and the field of municipal public works. This year AMSA has pleased to recognize the following:

25 Years - Kevin Cymbaluk

20 Years - Brian Anderson and Bryce Cooke

15 Years - Mark Harbicht

10 Years - Dan Blackie, Ron Pelensky, and Craig Pittman

5 Years - David Johnson, Mike Kiemele, Kelsey Martin, and Jamie Bleau

AMSA's Peer Award also recognizes long-standing commitment to AMSA and its member development through peer mentoring, support, and best practice sharing. Commitment to AMSA and the field of public works, as well as members' contributions to AMSA's operations are measured. AMSA members nominate Peer Award recipients annually, and this prestigious award is granted to qualified individuals, following a majority vote of AMSA's Board of Directors.

A career of distinction

AMSA's 2022 Peer Award Recipient, Joe Duplessie from Lac Ste. Anne County, has been one of the longest serving AMSA board members, with than a decade serving as Director for Zone 3 as Vice President, President, and currently sitting Past President. Joe officially retired from Lac Ste. Anne this past fall but is still assisting with programs in his semi-retirement, and he is truly a deserving recipient that exemplifies leadership both in his role with AMSA and his decades of municipal service. Thanks for everything Joe!

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'Tis the Season: The Government Comes Bearing Gifts

By Charlene Birdsall, CPA, CMA, CIM, CFP, National Bank Financial – Wealth Management

Yes, Billy – there really is a Santa Claus. According to Google, Santa Claus delivers gifts to more than 500 million households. But did you know that the Canadian Government has also put into place special gifts that you and your family may qualify for... while they last?



Registered Education Savings Plan (RESP)

This plan encourages you to save for your children's education. The encouragement is the Government of Canada 'gifting' you 20 per cent on each dollar you invest into the RESP, up to \$500 per year and up to a lifetime amount of \$7,200 per child! Therefore, for every \$2,500 invested into the RESP, you will receive an additional \$500 into the RESP. How often have you been able to make a guaranteed 20 per cent on your money! Now that is a gift!

On top of the general 'gift,' eligible low-income families may receive the Canada Learning Bond (CLB), which consists of an initial one-time payment of \$500, followed by annual payments of \$100 to a maximum of \$2,000! Quebec and British Columbia also offers 'gifts' as additional incentives. These additional amounts are paid directly into the recipient's RESP.

Inside the RESP, all money grows tax free. When using the RESP for post-secondary education, the 'gift' and growth on the investments

Did you know that the Canadian Government has also put into place special gifts that you and your family may qualify for (while they last)?

are taxed in the hands of the child (bonus as the children have low to no income – therefore no tax is paid). There is no taxation on the contributions made into the RESP, as this money is considered after tax dollars (i.e., it had already been taxed). For more information about the rules on the 'gifts,' please contact your wealth manager.

Registered Disability Savings Plan (RDSP)

This plan encourages savings for the financial security of a disabled person. This encouragement is the Government of Canada 'gifting' you a 300, 200 or 100 per cent match up to \$3,500 per year, based on the family income. The family income is based on the adjusted income of

the family until the disabled person turns 18, at which point the family income threshold becomes the disabled person's income.

If the family income is less than \$98,040, you would receive a \$3.00 'gift' for every dollar contributed on the first \$500 contributed. On the next \$1,000 contributed, you would receive a 'gift' of \$2.00 for every dollar contributed. Therefore, every year you contribute \$1,500, you receive a 'gift' from your federal government of \$3,500! If the family income is more than \$98,040, then you are 'gifted' \$1.00 for every dollar contributed. There is also a Canada Disability Savings bond up to \$1,000 paid into the RDSP for lower family income (\$49,020), up to a lifetime 'gift' of

\$20,000! These gifts are only available up to the disabled person's age of 49 years.

Another qualifier is that these 'gifts' must stay in the plan for 10 years before any withdrawal can take place. If the disabled person dies prior to the 10-year hold period of this 'gift,' it must be paid back to the government. For more information about the rules on the 'gifts,' please contact your wealth manager.

NEW GIFTS FOR 2023 Canada Student Loans and Canada Apprentice Loans

In the last Federal Economic Statement, the government is proposing to permanently eliminate interest on student loans and on existing loan balances!

The Tax-Free First Home Savings Account (FHSA)

This new savings vehicle helps you save up to \$40,000, with an annual contribution limit of \$8,000 to purchase a home. To open a FHSA, you must be age 18 or older and have not owned a home during either the current year or the

preceding four calendar years. The lifetime of this savings plan is only 15 years or before you turn age 71, so you must decide on your home purchase by that time. The bonus in the FHSA is that the contributions are tax-deductible, and the withdrawals are tax-free! This is in comparison to the existing Home Buyer's Plan, where you are borrowing from your RRSP, but you must pay it back within 15 years.

In addition, the FHSA is flexible whereby the unused contribution room of \$8,000 can be carried forward to future years, and deductions can be claimed in the year they were made OR in future years. This means you could open a FHSA even if you don't have the money, and then contribute up to \$16,000 in 2024 (using the unused contribution room of 2023). The investment recommendation for this type of plan would be a conservative portfolio, and the funds would likely be used in the near term.

If you have not decided on a home or have changed your mind in purchasing a home within the 15-year time limit, you can transfer all the funds directly into your Registered

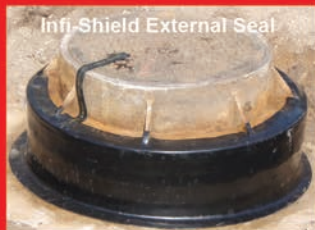
Retirement Savings Plan (they would not be considered a deduction at that time as you have already taken the taxable deduction through the FHSA). For the FHSA withdrawal to be non-taxable, there must be an agreement to buy or build a home in Canada by October 1, of the following year.

So, yes Billy, if you are good and qualify, you too can take advantage of the gifts from our government. ▶

Charlene Birdsall, CPA, CMA, CIM, CFP, is a Wealth Manager and Portfolio Manager for National Bank Financial. You can reach her at charlene.birdsall@nbc.ca. National Bank Financial – Wealth Management (NFBWM) is a division of National Bank Inc. (NBF) – as well as a trademark owned by National Bank of Canada (NBC) that is used under license by NBF. NBF is a member of the Investment Industry Regulatory Organization of Canada (IIROC) and the Canadian Investors Protection Fund (CIPF), and is wholly owned subsidiary of NBC, a public company listed on the Toronto Stock Exchange (TSX:NA).

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Rural Alberta Steps Towards Greater Resilience

By Claire Kroening and Danielle Hauck at the Resilient Rurals initiative

In 2018, the Town of Bruderheim partnered with the towns of Lamont and Gibbons to lead the development of a model for regional climate adaptation and resilience for small and rural communities. Called *Resilient Rurals*, the initiative's working group developed a Regional Resilience Plan to address the numerous climate risks projected for Alberta's Industrial Heartland region.

Built by small towns, for small towns, Resilient Rurals has defined shared priority areas and opportunities for collaboration among the partners. The team offers climate education, communication materials and planning resources to support resilience in Canadian rural communities.

"Climate change adaptation will look very different for small and rural municipalities than it will for larger urban centres," says Jill Yanch, Resilient Rurals founder and Project Manager. "We wanted to develop a holistic approach to resilience that better fits our communities."

Small towns face significant infrastructure challenges

Canadian municipalities are responsible for roughly 60 per cent of the nation's infrastructure, while only collecting around 10 per cent of all tax revenues. Maintenance and operating budgets reflect this challenging reality. Departments try to deliver the necessary services to protect key community assets like roads, bridges, wastewater treatment systems and public buildings, while anticipating future infrastructure needs for growing populations and changing climates.

Like their larger, urban neighbours, small and rural communities face shifts in temperature and precipitation, and the increasing likelihood of damaging extreme weather events. For communities of all sizes, smart and proactive infrastructure investment is paramount to ensuring their dollars are making the biggest impact down the road. Considering the returns on investments puts into perspective what future expenses are being avoided.

A focus on Bruderheim's infrastructure resilience

Aligning with a priority of the Town of Bruderheim's 2022-2026 Strategic Plan – *'Responsible Infrastructure and Development'* – Resilient Rurals is embarking on a new project to review infrastructure in light of climate change and connect 'responsible' infrastructure to climate adaptive investment, policy, and promotion. The project's outcomes will help guide public action and inform capital expenditure decisions. Some of the leading questions for exploration are: 'What adaptive measures are worth paying extra for upfront?' and 'What are potential long-term savings for infrastructure investment?'

The climate risk assessment Bruderheim undertook for Alberta's Industrial Heartland region identified numerous stressors, such as greater likelihood for water shortages, wildfires, flooding, windstorms, freezing rain, ice storms, and heatwaves. One benefit, however, was revealed in the projections – a longer construction season. Shifting seasonal temperatures



WHAT DOES A RESILIENT COMMUNITY LOOK LIKE?



COOPERATION AND A SENSE OF PRIDE
Residents feel a sense of pride in the spaces they have built. They are actively involved in community events and cooperate with one another for mutual success! People are attached to the community, as it's where they live, work and play.

Residents know their neighbours and feel they can count on them for help during an extreme weather event.

Community planners consider climate risks such as heatwaves, droughts, freezing rain, and other extreme weather events in their plans.

PLANNING FOR THE FUTURE
The community is adaptive and local governments consider potential climate futures and risk factors when developing policies and emergency management plans.



ACCESS TO RESOURCES
Local governments invest in public awareness and innovative adaptation strategies.



Residents have the tools to respond and adapt to climate change. Farmers are supported in adaptive agriculture innovations. Everyone is prepared for extreme weather events.

Homeless people and the elderly have access to cooling centres during heat waves, and farmers are safeguarded from crop failures events.



VULNERABLE POPULATIONS ARE LOOKED AFTER
Those most vulnerable to climate change are supported by other residents and are provided with the resources they need.

Graphic courtesy of Town of Bruderheim.

and a later snowfall have extended the season for repairs, upgrades, and replacements; with appropriate planning, municipalities in the region can take advantage of this.

Resilient Rurals' review will take a broad view of infrastructure. The Town of Bruderheim recently completed an asset inventory with accompanying condition ratings. The team will refer to this inventory throughout the project, considering all assets that are a part of quality life for those working and living in Bruderheim.

"Infrastructure plays such a critical role in the everyday lives of citizens," adds Yanch. "Incorporating climate projections is an important measure to ensure the longevity of our assets."

Climate change impacts must factor into decisions

Canada's warming environment is becoming increasingly volatile and poses significant, costly, and damaging risks. Alberta's infrastructure is designed and standardized for the current and historical climate, rather than the future projections. Without proactive adaptation, the costs of building and repairing critical infrastructure like

buildings, roads, and electrical systems will be a burden falling on taxpayers, who will pay significantly more in the future if climate-adaptive investments are not made today.

The Canadian Institute for Climate Choices report, *'Underwater: The cost of climate change on Canada's infrastructure,'* details how proactive investment can avoid lifecycle degradation and alleviate major payouts and service disruptions. It's also an opportunity to close persisting infrastructure gaps across the country. For example, if municipalities today make smart, upfront investments to integrate temperature-appropriate binders into asphalt, increase base layer depth and modify design for surface density, the country's 2.8-million-kilometer road system can be better protected and result in cost savings for future projects. These investments save taxpayers from the immense costs the Institute projects, which are upwards of \$3.4 billion in the mid-century under high emissions scenarios.

Of course, there will always be net costs. For every community across Canada, it's critical to identify the full extent of these costs and decide how they can be reduced. Cost of inaction is a

term used in economic analysis to appraise adaptation and mitigation measures and is a reminder for decision makers. This figure represents the combined present-day base costs of infrastructure, costs associated with socioeconomic change, development, and growth over time, and future climate change costs. Inaction is the key word here – with strategic measures, that bill can be reduced for communities like Bruderheim.

Yanch adds, "In order to make proactive decisions around infrastructure, we need data and the clarity it brings. Our Resilient Rurals communities are working together to share critical information and support a future that sustains our high quality of life."

After Resilient Rurals and Bruderheim have explored and identified options for proactive adaptation investment, the project and its outcomes will be publicly available as a model to support other small communities in building infrastructure resilience. ▸

Claire Kroening and Danielle Hauck are the Lead Project Assistant and Project Assistant of the Resilient Rurals initiative



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Greening Winnipeg's Historic Exchange District



By Paul Adair, Staff Writer

RRC Polytech President Fred Meier (right) and former Mayor Brian Bowman were on hand for the grand opening of Elgin Plaza, marking the event with the honorary renaming of a portion of Elgin Avenue after prominent Métis Winnipegger, Jemima Mackenzie Ross Coldwell. Photo courtesy of RRC Polytech.

In September 2022, Red River College Polytechnic (RRC Polytech) held the official grand opening of its new Elgin Plaza at the College's Exchange District Campus. This new pedestrian plaza / greenspace in a historic section of the city closes off the block of Elgin Avenue, between Princess and Adelaide Streets, to vehicles traffic and creates a beautiful new outdoor area where students and community members can be free to gather right in the heart of Winnipeg.

The new Elgin Plaza is nestled between RRC Polytech's new, 100,000-square-foot Manitou a bi Bii daziigae building and the existing Roblin Centre and is part of the College's \$60 million vision, *In Front of What's Ahead*, a campaign and strategic plan that seeks to transform the downtown space to enrich student life and promote the College's impact to the province of Manitoba.

Elgin Plaza fully ties into all the work RRC Polytech has done to date – and continues to do – in Winnipeg's Exchange District to transform its various learning spaces and create places where genuine connections and shared experiences can occur.

"As we were designing Manitou a bi Bii daziigae, we wanted to create a new home for

collaboration and innovation and, as a part of this, we knew we needed to create an outdoor pedestrian plaza that would help to connect the community," says Maria Mendes, Director, Environmental Stewardship & Campus Renewal at RRC Polytech. "One incredible feature of the Plaza is that you also get the ideal view of the art piece created by Jackie Traverse on the fourth floor of Manitou a bi Bii daziigae that extends to the exterior of the building. The Plaza helps to bring people together and revitalizes downtown Winnipeg in a very intentional way."

The Elgin Plaza was designed with the student and neighbourhood in mind and, as such, safety and community access was top of mind for the greenspace. Working with Winnipeg-based HTFC Planning and Design, RRC Polytech wanted to ensure that the space would become a true connection to the rest of the area and match the 'feel' of the Exchange District.

"This used to be a busy street and we wanted to have a new space that could allow students to cross, feel comfortable, and be safe for all who use it," says Mendes. "Elgin Plaza seamlessly meshes with the feel of the neighbourhood and introduces new elements to benefit the surrounding area, such

as seating areas, a recreational space with ping pong tables, and a new projector to showcase student work and create community art, and much more."

Elgin Plaza also makes the area more accessible for wheelchairs, strollers, food trucks, and firetrucks. The pedestrian space can also be used to host a wide variety of activities and events, such as rallies, concerts, tournaments, announcements, and much more, all in a central Winnipeg location. Because of this, the plaza has been designed to have easy access to power, space for a stage, and special lighting to ensure it is bright and inviting.

Bringing Green Downtown

The Elgin Plaza's gardens also include native Manitoba plants, adaptive urban street trees, and shade-tolerant foraging plants that will serve as cultural resources for Indigenous teachings.

The creation of the Elgin Plaza came about as a result of intense collaboration behind the scenes. Internally, RRC Polytech connected with stakeholders such as the RRC Polytech Students' Association, events, ancillary services, facilities, staff, students, and other departments to



RRC Polytech held the official grand opening of its new Elgin Plaza at the College's Exchange District Campus in September 2022. Photo courtesy of RRC Polytech.

make sure it was developing a welcoming space that could serve their needs. The College's external partners included the CentreVenture, Winnipeg Chinese Cultural and Community Centre, and

others who provided letters of support for the closure of Elgin Ave between Princess Street and Adelaide Street. Elgin Plaza was also supported by Prairies Economic Development Canada (PrairiesCan), TD Friends of the Environment, and Wawanesa Insurance.

"We are proud to work with our partners to create a pedestrian connection between buildings, transforming learning spaces and making it feel like a community campus where genuine connections and shared experiences occur," says RRC Polytech President and CEO Fred Meier in a September press release. "Developments like this allow us to build on our partnerships and strengthen our shared vision to enhance the student experience."

To confirm that the closure of Elgin Avenue wouldn't adversely impact traffic or parking in the area, RRC Polytech hired consultants to create a traffic report of the area. The City of Winnipeg has been one of RRC Polytech's main collaborators and granted permission for the street closure,

coordinated the services that lay below street level, and have been incredibly supportive in creating this community greenspace.

"The opening of Elgin Plaza is significant for Winnipeg's downtown," said former Mayor Brian Bowman at the grand opening. "The City of Winnipeg and RRC Polytech have a longstanding partnership and spaces like this help to bring people downtown and revitalize Winnipeg's Exchange District."

Outdoor spaces, like Elgin Plaza, have a positive impact on wellbeing and help create healthy communities. Creating this new greenspace in Winnipeg's downtown is already helping to bring people together and offer a new place for safe connection and collaboration.

"Elgin Plaza has truly been welcomed by students and community and, if social media posts and physical presence is any indication, the community is really enjoying this new outdoor space – taking photos of the artwork, making use of the ping pong tables, and events being hosted on-site." ▸



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Making Play Happen in Lethbridge

By Paul Adair, Staff Writer

Over the summer of 2022, the City of Lethbridge shut down several of its community playgrounds for a new pour-in-place rubber resurfacing project that makes play more accessible, inclusive, and safer for all.

Prior to putting a request for quotation for bids, Lethbridge's Parks department first considered a number of playgrounds in the city to select candidates that would most benefit from having the rubber surfacing installed. To be a good candidate, Parks looked at such things as location within the city and where they might be to nearby parks that already have rubber surfacing, pathway accessibility, curb access, and the kinds of equipment already on site, including the presence of accessible components.

The project team also considered how much preparatory work would need to happen for the playground to become rubber-ready. As most playgrounds that use pea gravel surfacing have the material installed several inches below the top of the concrete border, it could mean that the height of the equipment might be difficult to adjust and prevent the conversion of the site to rubber, which is installed flush with the top of the concrete border.

"Another factor was the size of the play surface," says Lethbridge Parks Project Manager, Craig Richter. "The installation cost of rubber surfacing is much higher than traditionally-used pea gravel, so we had to think about the value of surfacing a single large area compared to converting two smaller sites instead. It took a rigorous process to select the right playgrounds for the project that fit our budget and would deliver the best value to the city."

At the end of the selection process, seven of Lethbridge's playgrounds were chosen for the rubber resurfacing project: Willowbrook; Rideau; Georgetown;

The pour-in-place rubber provides a fall suppression value meeting the CSA Z614-14 Standard for Outdoor Play Spaces. Photo courtesy of City of Lethbridge.



The new play equipment at Fairmont Garden Playground has elements specifically designed to encourage a child's interaction and imagination. Photo courtesy of City of Lethbridge.

Kiwanis; Ridgewood; Fairmont Garden; and Heritage Road.

A pour-in-rubber solution

The pour-in-place rubber installation was performed by Shercom Industries, a Saskatchewan-based company at the forefront of recycling technology through innovative tools, technologies, and processes. For this project, Shercom approached each playground sequentially, first closing the space and setting up fencing for safety reasons. The company then removed the existing pea gravel off-site and measured the height

of the existing base before adding new base gravel to ensure a level resurfacing area.

The pour-in-place rubber product was mixed on-site in a process similar to concrete, where the rubber crumb was placed into a mixer along with a urethane binder, and then wheelbarrowed where required and poured out to a specific thickness. The depth of the pour-in-place rubber was directly related to the fall suppression value it provided and was required to meet the CSA Z614-14 Standard for Outdoor Play Spaces. The rubber was then troweled out smooth and left to cure for a couple days.

“Shercom came in and did the base layers, which is a recycled rubber crumb on top of a layer of foam – that’s the part that you don’t see but provides the fall suppression,” says Richter. “The layer on top is actually only about a half-inch to three-quarter-inch thick and doesn’t provide the fall suppression value that the rubber crumb beneath does. And then, once the rubber has cured and the fencing is removed, the playground is ready for use.”

The project specified the use of Alberta-sourced recycled tires in the making of the pour-in-place rubber material and reuses them for a higher purpose. As a company, Shercom is dedicated to finding new and better ways to reclaim, recycle, and reuse scrap tires as the base for innovative, eco-friendly products and diverts more than 50 million pounds of used tires per year from the landfill.

In addition to the resurfacing, the aging play equipment at the Fairmont Garden and Heritage Road parks had reached the end of its life and was also replaced. The new playground equipment was supplied and installed by Alberta’s BDI Play Designs.

Accessibility and inclusivity at play

The new play equipment was chosen with elements specifically designed to encourage a child’s interaction and imagination. The Parks team also looked hard at how to create new opportunities for interaction and included accessibility components where they could.

At the Fairmont Garden playground, wheelchair-access ramps lead up to the main structure and a saucer swing (also at Heritage Road) allows a child with limited mobility to enjoy the swing, where they might not have been able to with a traditional swing. And, in addition to the standard slides and rock climbing, other features include a communication board to help children on the autism spectrum with verbal communication, and a Hickory Dickory Dock station with braille for those children with visual impairments. The Parks team looked hard at how to create new opportunities for interaction and included accessibility components where they could.

“We want kids of all abilities to be able to come out and have fun and experience

a lot more than just climbing a ladder and going down the slide over and over, and this new equipment offers them a greater diversity in terms of things to do,” says Richter. “These improvements allow kids of all abilities to participate, have fun, and be engaged. And that’s probably the biggest reason why we continue to invest in our community playgrounds.”

The public’s response to the resurfacing and new playground equipment has been overwhelmingly positive, and everyone seems to really enjoy the finished product. Most importantly, however, and there has been a lot of excitement from the kids and parents who use the space the most.

“I was taking some photos of the completed rubber at one site and a resident, who appeared to be running a daycare was there with several children who came up to thank me and the City of Lethbridge for doing all this work,” says Richter. “It was just so awesome to see the smiles on the kids’ faces. That was probably the best feedback we could have received.”

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Walking Together: Preparations for the Pope



Public Works setting up for an expected 9,000-plus people in attendance for the Pope's visit to Maskwacis. Photo courtesy of Terra Brenneis.

By Paul Adair, Staff Writer

Organized by the Canadian Conference of Catholic Bishops (CCCB), Pope Francis visited Canada from July 24 to July 29, 2022, and spent three historic days in the Province of Alberta to listen and dialogue with Indigenous communities, as well as to address the participation of the Catholic Church in the operation of residential schools throughout Canada.

The fact that the papal visit to Alberta went off with nary a hitch could have been called nothing short of a small miracle, but that would be unfair to the many of the province's Public Works employees working behind the scenes to make sure everything came together.

As home to the largest number of former residential schools in Canada, the visit by the Pope is a powerful symbol of the Catholic Church's commitment to the journey towards reconciliation.

There were four separate stops to the itinerary, each with their own challenges and opportunities, including: a stop at Maskwacis, home to Ermineskin Residential



◀ *Invited by the Archbishop and the Holy Father, Brenneis had the once-in-a-lifetime opportunity to meet with Pope Francis at St. Joseph's Seminary. Photo courtesy of Terra Brenneis.*

▼ *Along with Tetreault, Brenneis and the local Maskwacis public works personnel, the City of Edmonton Streets Department were on hand to help set up the final details – like this tipi – for the Pope's visit to Maskwacis. Photo courtesy of Michelle Tetreault.*

▼ *Brenneis leading a run-through meeting with the Vatican advanced team (Swiss Guard) and representatives from the CCCB to obtain a good sense of logistics before the Holy Father's arrival. Photo courtesy of Michelle Tetreault.*



School, one of the largest former residential schools in the country; a meeting with Indigenous people at the recently reconstructed Sacred Heart Church of the First Peoples in Edmonton; a Holy Mass at Commonwealth Stadium; and attending the Lac Ste. Anne annual pilgrimage.

“When the Pope visits a country, it’s typically a celebratory event. This visit to Maskwacis was unique in that it was a very somber event, and it was all about truth and reconciliation – and that’s why the theme for the event was called *Walking Together*,” says Michelle Tetreault, President at Public Works Management Corp., as well as Chair of the American Public Works Association Emergency Management Committee and volunteer Chair at Alberta Public Works. Given her background and experience at coordinating large scale events, Tetreault was brought into Office of the Papal Visit (OPV) as the Lead for Venues and Logistics for the Pope while he was in Alberta.

Short notice, no problem

For an event such as this, there is typically at least a year of preparatory work required to make it happen. The Pope coming to Alberta, however, came together on an accelerated schedule. The seeds for the visit were first planted after an Indigenous Canadian delegation went to the Vatican in March 2022 to meet with the pontiff. After this important meeting, the CCCB started to put together the itinerary for a papal visit to Canada, which was officially announced on June 13.

Tetreault was on the scene 50 days prior to when the Alberta leg of the visit was set to happen and participated in the coordination of the activities for all the different stakeholders and public works elements, such as transportation, communications, and venue preparations.

“Right up to the moment of the Pope arriving, we were all hands-on deck and workshoping everybody’s movements, and really hammering out all the details because we only had a weekend to figure out where all the gaps were,” says Tetreault. “But who better to do this sort of thing with so many moving parts than a public works professional?”

Terra Brenneis is the Parks Program Manager at Regional Municipality of Wood Buffalo Public Works She was brought into

the OPV by Tetreault just two weeks before the papal visit to act as the Loading and Load Out Coordinator at the Maskwacis site.

“What I did behind the scenes was everything pertaining to that site, such as liaising with the community, setting up tents, coordinating the contractors, bringing in the equipment, and everything else that was required to ensure the site was clean and ready to go,” says Brenneis. “Basically, my job was to coordinate all the logistical elements and organize suppliers, so they were not in each other’s way.”

Success through collaboration

The level of collaboration and oversight required to ensure the success of the papal visit was tremendous, but Alberta’s public workers showed themselves to be well-equipped for the task.

“Meeting the required timelines was a lot of pressure,” says Brenneis. “I was carrying around three cell phones and there was no time to stop. We had to make calls in the moment to keep moving forward and stick to the plan. It was constantly, ‘go go go.’ It was an honour to work with so many talented people. You could just feel the fellowship of public works.”

An example of this esprit de corps among public works was demonstrated with the efforts of the City of Edmonton Streets Department, which responded to an APWA alert bulletin requesting assistance in cleaning the freshly paved roads the night before His Holiness arrived at Maskwacis. As the Edmonton Crew finished their job and was preparing to leave at the end of the day, they saw Brenneis and Tetreault working with the local Maskwacis public works personnel to erect the final tipi for the next day’s event and jumped in to help, with everyone working together to make sure everything was in place.

For Tetreault, this was one of the highlights of the visit – clearly showing how everyone felt they were part of something bigger and able to put their egos aside, and all pull in the same direction.

“Sometimes on these kinds of projects you end up getting caught up in the bureaucratic part of it,” says Tetreault. “But with the CCCB taking the lead, there was this feeling of, ‘you’re my partner and we have 50 days to pull this off, and everybody has

to be on their A-game.’ All there was left was to pray to God for good weather – which he gave us – and the rest was history.”

From having enough busses to transport the Indigenous community to the site to having enough parking for the government officials and Vatican dignitaries – plus accompanying security and entourage – to preparing the ground for 6,000-plus chairs to ensuring volunteers were where they had to be when they needed to be there, the logistics of bringing people and equipment in and out of Maskwacis proved to be a significant challenge to overcome. Even something as seemingly simple as the movement of portable toilets in and out of the area required the OPV to choreograph a carefully orchestrated dance.

“The portables that were at Maskwacis had to be moved as soon as the event was over and gone within three hours because, the following day, they were needed for the Holy Mass at Commonwealth Stadium,” says Tetreault. “It took a lot of precision and understanding of the grounds, understanding how equipment moves, and understanding how people interact – so it’s just not as easy as you might think.”

The overall success of the papal visit to Alberta was a source of great pride for the entire OPV team, as well as for the public works community in Alberta that were there to pull everything together. The event had a tremendous impact on all those in attendance and will not be soon forgotten.

“I fell in love with Maskwacis and will take so much away from my time there,” says Brenneis. “Michelle (Tetreault) told me when I started that I would need to take pictures every step of the way because the time was going to go by so quickly. When it was all over, I almost went through a period of mourning because I was on such an adrenalin rush. It almost made it hard to go back to my daily routine.”

Tetreault agrees, adding, “I think we all gained a greater appreciation working with the First Nations communities. We were invited to a powwow to understand better their culture and they taught us about how they celebrate their culture in the community. Maskwacis welcomed us with open arms in and I will always remember the friendships we made.”

As the Hamlet of Neerlandia has grown, so has the need to upgrade the community's aging septage collection and treatment system.

Upgraded Septage Lagoons Provide New Life to Small Towns

By Keith Ogletree, P.Eng. at Associated Engineering

As communities grow and infrastructure ages, an inherent need arises to upgrade or replace existing municipal infrastructure to maintain adequate service levels for the community. Responsibility for the operation and maintenance of such services, in the case of the Hamlet of Neerlandia, lies with the county of Barrhead.

The community's septage collection and treatment system is comprised of a low-pressure collection system and a single-cell septage lagoon system constructed in 1979, with a low-pressure forcemain approximately 1.0 kilometre in length connecting the two. Considering the age of the system and the recent developments in the area, the County of Barrhead operations department highlighted the need to evaluate the system for potential upgrades in capacity and regulatory compliance.

In 2020, the County of Barrhead engaged Associated Engineering (AE) to review alternative locations for the proposed facultative cell, and four options were considered. The AE project team prepared a matrix to evaluate each option over a range of criteria

including physical location, regulatory permitting requirements, design schedule, construction costs, land acquisition, maintaining lagoon operations during construction, and constructability. Results of the evaluation suggested that converting the existing lagoon into a storage cell and constructing a new facultative cell directly east of the existing cell was the most favourable option.

In 2021, the County commissioned AE to complete the necessary design, permitting and procurement to construct the system expansion. Unlike larger more complex wastewater treatment systems, the requirements and priorities for lagoon systems shift to allow the needs of the serviced population to be met while not presenting undue strain to the municipality.

With large areas to cover and limited resources, operators are not able to be routinely present at these systems to maintain operation. As such, the systems need to be designed and able to operate in a hands-off manner as much as possible without the need for constant oversight from staff, or any significant maintenance and / or upgrade requirements, all the while meeting

the effluent quality requirements of relevant legislation. These needs emphasize that simplicity, reliability, and low costs, both capital and operating, are of utmost importance to the design considerations.

The AE project team leveraged their experience and understanding of projects of this nature to complete a practical and cost-efficient design. The upgrades to the system included the following highlights:

- Expansion of the existing storage cell to provide capacity for the 25-year design population,
- A new facultative (aerobic stabilization) cell,
- A clay liner system to prevent permeation of stored effluent,
- A new truck dump structure to facilitate service of surrounding septic tank systems,
- Twinning of the existing LPSS forcemain, and
- New weir-based flow control structures.

Challenges to overcome

Rehabilitation and upgrades to existing lagoon systems, such as the one in Neerlandia, pose several permitting,



While the window for desludging and land application was missed, the project team saw a opportunity to manage the existing sludge volumes within an expanded storage cell.

design, and construction challenges. The existing lagoon system operated under an Environmental Protection Enhancement Act (EPEA) approval, and in order to perform the upgrades a re-registration process was required. Alberta Environment and Parks (AEP) outlined additional requirements before the re-registration could be processed: a leakage assessment and identification of odour potential to determine if the upgrades would cause new adverse impacts to the environment and the surrounding residents.

A key component of the designed expansion was the geotechnical conditions of the lagoon area. A geotechnical investigation revealed that both the in-situ clay was of a suitable quality for the construction of a clay liner underlying the site and that groundwater levels that would not interfere with the proposed system. Directional drilling was also determined to be viable for the 1-kilometre length of forcemain requiring twinning.

The presence of biological sludges originating from the inflows of solids, and the resultant biological activity of microorganisms that play the primary role in stabilizing the effluent, present significant challenge. As part of the design process, sludges must be surveyed and characterized so that the

volume, solids ratios, and chemical makeup are understood. Overtime, as solids settle to the bottom of the lagoon cell, available storage volumes are reduced. Removal of sludges (desludging) is required to restore and maintain the design capacity of the lagoon.

Mitigating risk

Owners shoulder a significant risk when planning to de-sludge lagoon systems and the disposal methods required can vary widely in cost depending on the sludge properties. The lowest cost method is typically land application and is preferred among most operators. The *'Guidelines for the application of municipal wastewater sludges to agricultural lands'* (Government of Alberta, 2009) provides a framework for the distribution of these sludges as beneficial amendments to agricultural lands. However, if the sludge properties exclude it from being land applied, the cost to treat and dispose can be significantly higher.

To evaluate this risk, a thorough investigation of the sludge volume and quality was completed as part of the design process. The investigation concluded that the volumes of sludge present were relatively small and were suitable for land application. With an

unusually rainy month of June, the window for desludging and land application was missed as it coincides with start of the farming season. The project team foresaw an opportunity to manage the existing sludge volumes within the expanded storage cell. Engineers calculated that the storage cell expansion provided sufficient capacity in the mid-term to manage both the existing volume of sludge and incoming effluent thus negating the need to load and haul the material off site; this impromptu solution resulted in a cost savings for the County.

A new lagoon

Construction of the lagoon expansion commenced in May 2022. Consistent with the criteria established to select the preferred option, construction sequencing was critical to maintain system operations during construction. The design enabled the contractor to leverage the existing lagoon cell configuration, its berms, and system piping and allowed for the new facultative cell and storage cell expansion to be constructed without interruption to service.

Bound by the existing lagoon floor elevation, excavation of the new facultative cell and storage cell expansion was expected to generate in excess of 19,000 cubic meters of surplus clay material. With increasing truck hauling costs and a scarcity of borrow sites, suitable clay backfill is considered a valuable commodity in the construction industry. Collaborating with the County, the opportunity to collect and stockpile the surplus material was seized by the County for potential use on future projects.

The Neerlandia Lagoon Expansion project was successfully completed in September 2022 on time and on budget while maintaining uninterrupted service to residents and businesses. The upgrades will enable the Hamlet to meet the growing demands of development well into the future while meeting effluent quality requirements to protect the environment. ▀

Keith Ogletree is a Civil Engineer with Associated Engineering who focuses his expertise on linear infrastructure and containment systems, particularly in the evaluation, rehabilitation, and upgrading of existing systems to meet current demands and standards.

Five Ways Attachments Enhance Productivity and Profitability

By Lynn Marsh,
Road Widener LLC

Infrastructure across the globe is in need of repair and replacement leading to an abundance of necessary construction projects. While this presents a huge opportunity for contractors, success depends on having the right equipment to tackle projects effectively, efficiently, and safely. Sometimes the most cost-effective solution for contractors means maximizing the fleet of equipment they already have.

One way to do that is to look at equipment attachments. Skid steers, wheel loaders, graders, and other equipment are staples with almost every construction crew. While it might not always be the first product one thinks of for road and utility projects, the versatility offered by innovative industry attachments makes host machines invaluable.

Here are five ways attachments can help enhance productivity and profitability.

1. Tackle more with less

Attachments increase the versatility and flexibility of the equipment contractors already own. Instead of bringing heavy equipment, they can bring additional attachments to a jobsite. Material placement and offset vibratory rollers are a new generation of attachments that go beyond traditional material loading and digging to create innovative jobsite solutions, improving efficiency and safety.

Purchasing additional attachments helps to increase the host machine's ability to tackle more jobs. Attachments, like the material placement and offset vibratory roller, safely allow operators to lay a multitude of materials, including things like topsoil, gravel, hot mix asphalt, and more. Each attachment expands an operation's repertoire without having to invest thousands of



Material placement and offset vibratory rollers are a new generation of attachments that go beyond traditional material loading and digging to create innovative jobsite solutions, improving efficiency and safety. Photo courtesy of Road Widener LLC.

dollars in new machinery. The best part is that, because attachments are placed on the equipment contractors already own, crew members don't need to be trained on how to use a new piece of equipment.

2. Reduce labour demands

Training operators on new equipment is too time-consuming during labour shortages. Time itself is a precious resource but finding

new employees can be a challenge currently as well. When running on a skeleton crew, every second not spent working means money lost. By working with the equipment operators already familiar with, businesses can cut back on equipment training times and increase operator confidence.

Using attachments is also beneficial because they don't require as many equipment

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A Digital Wastewater Solution

By Paul Adair, Staff Writer

As a subsidiary of the world's largest environmental services company and leader in ecological transformation, Veolia Group, Veolia Water Technologies specializes in water and wastewater treatment solutions for industrial customers and public authorities.

Veolia Water Technologies' projects tend to vary in size and complexity, from advanced projects to engineering and equipment procurement, to service, and chemical contracts. The company currently has thousands of installations in municipalities and private utilities from coast to coast across Canada, ranging in capacities from 0.1 to 600 million litres per day.

With over 250 Canadian employees specializing in application and design engineering, manufacturing, project management, technical services, and process optimization, Veolia Water Technologies' clients in Canada have the benefit of dealing directly with the equipment designer / manufacturer during the complete lifecycle of a project. The comprehensive capabilities of the water leader help to ensure that projects are completed safely, on time, and on budget.

Veolia clients have come to count on the company's many years of experience and expertise with innovation to design, manufacture, and service its products for use in western Canada. Veolia ensures that project, process, regulatory, environmental, and operational considerations are all considered and kept top of mind when defining what the best technological solution might be for each application.

When designing solutions, the focus of the company is always on its customers' unique goals, which may include low operating costs, energy and water conservation, an optimized design for an existing footprint or the recovery of valuable resources or products.

"To help overcome these challenges, we have created a digital tool called Hubgrade, a portfolio of digital services that combines the power of data collection and processing,



Hubgrade Performance Plant allows municipalities and industries to optimize the performance of their sites while sustainably preserving water resources. Photo courtesy of Veolia Water Technologies.

machine learning, and human water expertise to ensure compliant, safe and efficient water management," says Martin Caspar, Digital Transformation Director at Veolia Water Technologies Canada.

A smart platform

Veolia's in-house, smart digital platform, Hubgrade, enables its customers to remotely view, anticipate, and optimize water treatment plants and equipment, allowing municipalities and industries to optimize the performance of their sites while sustainably preserving water resources. Hubgrade delivers insightful data to its users by creating added value from the operational data via such things as smart indicators, smart alarms, and predictive tasks.

Hubgrade today has more than 1,700 active users worldwide, which include engineers, plant managers, operators, process experts, and others. In Canada alone, Veolia

◀ *A new partnership with Orange Business Services allows Veolia Water Technologies to continue concentrating on what it does best – providing innovative technologies and services to its water and environmental customers. Photo courtesy of Veolia Water Technologies.*

Water Technologies has more than 100 water treatment equipment solutions connected to the Hubgrade digital platform in various applications, such as for municipalities or industries.

"Many of our customers are today seeking to back their decisions with advanced analytics, so having access to validated data and its management becomes critical," says Caspar. "For them, ensuring compliance and resource availability are key, therefore the enhanced support and insights we can give with our tool is very well received, and it can be as simple as connecting a plant to the Cloud and providing remote support or proactive process expertise to help the plant's operating personnel face unexpected challenges."

Veolia also provides an AI-powered, real-time control tool specifically designed for wastewater treatment plants called Hubgrade Performance Plant (HPP). Using machine learning, HPP provides real-time advice for

such things as reducing operational expenditure, developing optimized operating scenarios to enable process intensification, or forecasting incoming wet weather events.

“For us, giving access to data is a good way to get process experts involved in our operations, as well as to receive support remotely in a more proactive way than it used to be,” said Christine Miller, Wastewater Supervisor at District of Sechelt, British Columbia.

Growing the Hubgrade platform

In late September 2022, Veolia Water Technologies agreed to work with the network-native digital services company Orange Business Services (OBS) to support the growth of the Hubgrade platform, as well as develop innovative digital services for its customers around the world.

With expertise across the entire digital value chain, OBS supports the project with more than 25 types of expertise around digital, artificial intelligence, IoT, data analytics, and cloud, as well as cybersecurity with Orange Cyberdefense. In addition, the

company has extensive knowledge in business data collection solutions from its experience with the industrial sector.

With the mindset of continuously improving all of its digital services, Veolia Water Technologies turned to OBS to support them at the heart of their business needs and address the challenges of modernization and differentiation.

“For our users and for us, digital is not an end in itself but an enabler,” says Caspar. “We believe that this partnership will strongly contribute to help us accelerate adoption of our digital products and face tomorrow’s water challenges.”

Similar to its collaborations with other telecom and IT companies, Veolia Water Technologies’ recently announced partnership with OBS will allow the company to continue concentrating on what it does best – providing innovative technologies and services to its water and environmental customers. The specific expertise of OBS in the digital product interface space is helping to enhance Hubgrade’s user interface, making it more intuitive, agile, and more user-friendly than ever before.

“We are delighted to work with an innovative company like Veolia Water Technologies, leveraging digital services to support the environment and create a positive impact,” said Aliette Mousnier-Lompré, CEO, Orange Business Services in a press release. “This project is unique in terms of its size and technological complexity, and our teams were able to cover the entire scope from business data collection to digital solutions to support Veolia Water Technologies solve their needs. We are committed to a process of co-innovation and co-construction with Veolia Water Technologies to develop efficient and secure platforms secured by Orange Cyberdefense to support responsible growth.”

Looking ahead, Veolia Water Technologies and Orange Business Services have jointly defined several co-innovation projects around the development of a universal multi-protocol and multi-connectivity IoT gateway, as well as the exploration of services around ‘Machine Learning at the Edge (ML@Edge),’ where raw, actionable data is generated far from the Cloud and can be more complicated to compute. ▀

Continued from page 41

operators on-site. When finding a good crew is hard, attachments give the best advantage on a jobsite when there are few people. One person can do multiple jobs without having to know how to run more than one or two machines. This increases productivity and decreases on-site crowding. It also helps increase operator safety.

3. Enhanced safety

Material placement and offset vibratory roller attachments both increase operator and jobsite safety. The biggest benefit of using an offset vibratory roller is allowing the host machine to remain on the solid, flat ground throughout the compaction process due to the offset arm that lowers the drum during the compaction process.

Most traditional roller attachments connect to the front of the host machine. When compacting road shoulders and edges, this pushes the machine off-balance, leading to a risk of tipping. Tipping is a huge danger that can lead to injury

and even death. One worker’s comp claim pays for an entire offset vibratory roller attachment. The attachment is also small enough to be transported safely with the host machine instead of requiring additional hauling equipment.

3. Reduce transportation expenses

When cutting back on the size of the machinery an operation is using, they don’t just save gas costs and maintenance fees, but they also save on transportation expenses. Heavy equipment haulers usually require additional fees to transport equipment to a jobsite. When the host machine is the only thing to be hauled, operations can fit both the host machine and the attachment onto a single trailer that can be pulled by a standard pickup truck. Overall, this reduces cost, though this isn’t the only way attachments can save money.

5. Minimize maintenance costs

Another big expense for many businesses is maintenance fees for heavy

machinery. Each piece of machinery a business owns requires a set maintenance schedule for oil changes, transmission checks, and more. Attachments don’t have individual motors. This means the only maintenance that will need to be invested in is the routine maintenance of the host machines, which are already scheduled. The only cost to worry about when it comes to these attachments is the cost of the attachments themselves. This is also true when examining equipment transportation costs.

Operations can maximize their fleet and capabilities by working with a manufacturer that specializes in attachments strategically designed to improve jobsite efficiency to increase profitability and productivity. ▀

Lynn Marsh is the President of Road Widener LLC and has 20 years of experience in the road construction industry. Road Widener LLC puts more than 30 years of road construction experience to work manufacturing innovative road and utility construction equipment.

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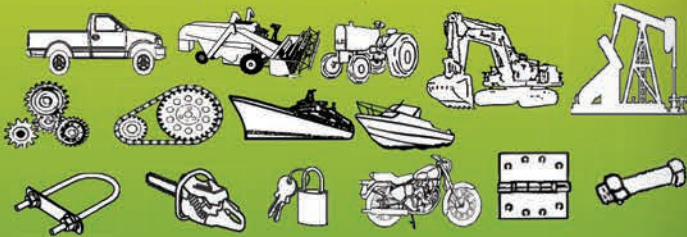
Solvent Free • Non Hazardous

**Acceptable for use in
Food Plants in Canada**

BreakThru[®], Fast Penetrating Oil, highly refined oil-based product that infiltrates components quickly. No Silicone or Teflon.

• **FREES FROZEN - RUSTED PARTS:** bolts, engine parts, hinges, locks, bearings, bicycle & motorcycle chains, chains, rollers, wheels & other moving parts, aluminum, chrome & steel surfaces, guns & fishing equipment, marine equipment, industrial machinery, relays, switches, tools, & MUCH MORE!

**Auto • Truck • Marine • Home
• Farm • Shop • Industry**



C10 370 g

C5 145 g

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Steel Hard in 15 Minutes • Full Cure in 1 Hour

PERMANENTLY ADHERES TO:

Steel - Aluminum - Wood - Copper - Cast Iron - PVC - ABS - Bronze -
Concrete - Plastics - Glass - Fiberglass - Ceramics - Brass & Much More!!!
•500°F temperature resistant • 3-year shelf life • Sets up under water • Impervious to chemicals •

AUTO/TRUCK: Gas Tanks, Tailpipes, Mufflers, Intake Manifolds, Radiators, Blocks
HOME: Furniture, Appliances, Hot Tubs, Pools, Gutters, Screens, Glass, Woodwork
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HOBBIES: Crafts, Jewelry, Ceramics, Plastics, Models, Molds, Glass, Toys
PLUMBING: PVC, ABS, Faucets, Fixtures, Porcelain, Copper, Brass, Stripped Screws

STOCK #	SIZE	CASE QUANTITY
16002	65 g	12
6004	130 g	12

THE RUST STOPS HERE!



Your choice should be **RUST DESTROYER®**

RUST DESTROYER is a **PATENTED** primer engineered to be applied directly over rusted metal, rusted painted metal, bare metal, galvanized metal, aluminum, tin and core tan steel. It converts active rust to a passive form on contact. An absorbing action in the primer film simultaneously raises the rust from the surface and envelops all converted crystals in the primer, eliminating exposure to oxygen and moisture, which will prevent further rusting. It forms a tough shield that adheres to all paints and provides a continuous protective layer.

- Heat resistant up to **427°C (800°F)**
- Apply directly over rust • No sand blasting
- No scraping to bare metal • Works with any top coat paint
- No washing before or after application
- No sanding glossy finishes to improve adhesion

NLS PRODUCTS Stock # 16002
65 g / 2.2 oz.

TECH STEEL®

STEEL REINFORCED EPOXY PUTTY
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Steel Hard in 15 Minutes • Full Cure in 1 Hour
Permanently Adheres to: Steel, Aluminum, Wood, Copper, Cast Iron, PVC, ABS, Bronze, Concrete, Plastics, Fiberglass, Glass, Ceramics, Brass

Devient dur comme l'acier en 15 minutes
• Vulcanisation complète en 1 heure
Adhère de façon permanente à: Acier, aluminium, bois, cuivre, fonte, CPV, ABS, bronze, béton, plastique, fibre de verre, verre, céramique, laiton

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Stock # 16002



Why should you be forced to buy a separate primer or rust treatment for each specific job?



Stock #	Size	Can Coverage
73013	340 g Aerosol (6 / cs.)	- 15 sq. ft.
73005	18.9 L Pail Qty. 1	- 1500 sq. ft.



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