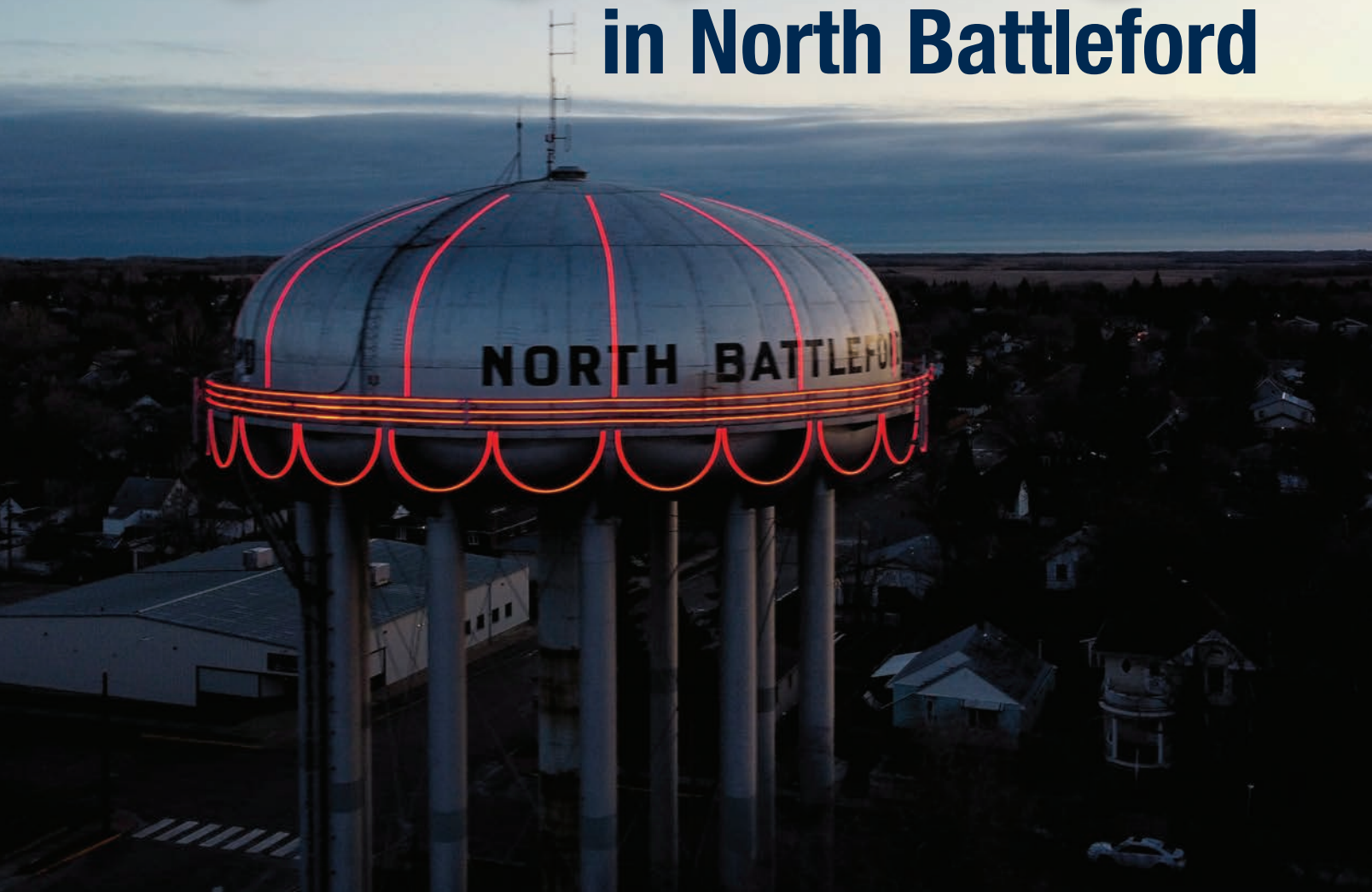




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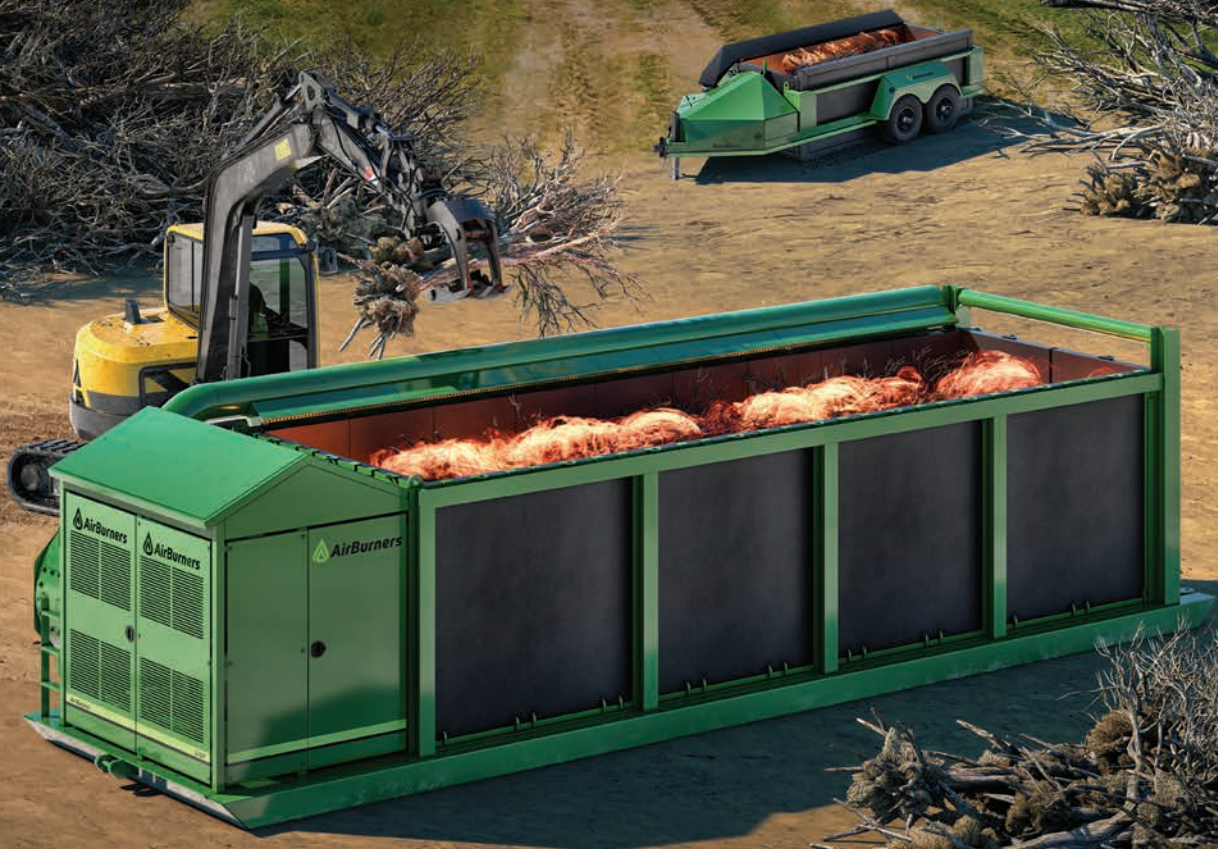
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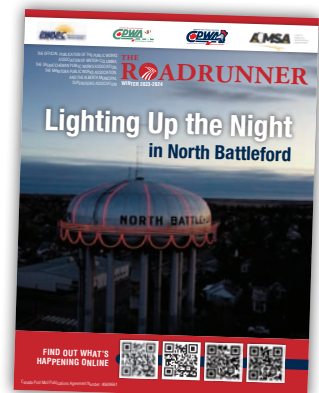
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On the cover: Standing high above the city, North Battleford's new water tower lights will continue to shine as a bright beacon over the community for many years to come. Photo courtesy of City of North Battleford.



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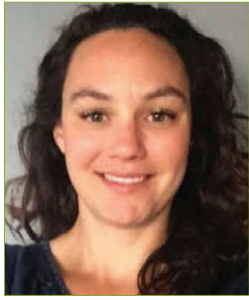
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A Message from the Public Works Association of British Columbia



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

Hello once again from beautiful British Columbia and I hope you had a wonderful holiday season filled with cheer.

I am excited to be writing again as the British Columbia Chapter President for 2024. Our chapter has an amazing group of board members and volunteers and I'd like to first acknowledge the outstanding work that they all do to keep this chapter moving, as well as the past volunteers, board members, and executive who set the foundation on which we continue to grow.

Over the last year we have made significant strides on some of our strategic priorities and our social media and marketing team has been busy growing our network and expanding our message throughout the province. If you have not already taken advantage of the job postings or advertising spaces located on our website, be sure to check them out and follow us on LinkedIn, Facebook, and Twitter for important updates.

Our education team has also been working hard to deliver some fantastic training opportunities and the 2023 Winter Maintenance training workshops were so popular, some sessions sold out. Keep an eye on our events calendar for upcoming sessions and mark your own calendars for the annual Women In Public Works Event, happening March 8th, 2024.

In British Columbia, we recently wrapped up our 5th Joint Annual Conference and Tradeshow with the British Columbia Municipal Safety Association (BCMSA). I truly enjoyed engaging with everyone I had an opportunity to meet. Thank you to all of our partners, sponsors, and delegates for making this a memorable conference, and we are already in the planning stages for our 2024 Joint Conference and Tradeshow scheduled for Penticton. Dates are still to be determined, so please keep an eye on our website for early bird registration. I am

looking forward to connecting with new people and seeing some familiar faces.

I would also like to take this opportunity to send a sincere thank you to the BCMSA for their organization's time and effort in putting together a fantastic experience for both of our associations once again. Excellent job to everyone involved.

Looking ahead into 2024, the Public Works Association of British Columbia's (PWABC) Executive will have some familiar faces with Taryn Scollard as President-Elect, Alexander Christensen as Treasurer, and Chris Anderson as Past-President.

While Scott Lamont is no longer on our executive, he remains an enthusiastic voice for public works and a huge supporter of PWABC. He is also the current President of the Canadian Public Works Association (CPWA) and I thank him for his ongoing contributions to our chapter. We look forward to continuing to work with our talented group of existing Board members consisting of Pat Miller, David Best, Dylan Myers, Devon Aaroe, Jason Adair, and Ryan Adams.

The PWABC is also excited to announce the addition of two new Board of Directors. Past president Matt Brown from the City of Surrey will be rejoining us as a Board Director and we are also welcoming Jatin Chhibba from Langley Concrete Group to the team. Thank you as well to our two outgoing members – Mafe Pinzon and Kam So – for their dedication and volunteer efforts.

As always, please don't forget that 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 2024, please reach out to us at executivedirector@pwabc.ca.

Meryl Ditchburn Heinz

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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

Mother nature changed things up this year as we enjoyed a ‘normal’ fall season; something that we have not seen in a while. This gave everyone the opportunity to pause and brace for the inevitable colder temperatures and the arrival of snow. We knew that it was just a matter of time before public works professionals were once again called upon to clear the roads of ice and snow, fix water main breaks, and maintain the normal operations that keep our communities safe.

On September 29, 2023, the Saskatchewan Public Works Association (SPWA) hosted another of our free Lunch & Learn Roundtables on contracts. Presented by the City of Regina, this has been an ongoing series with additional panel members joining in on the conversation and helping answer questions. The series has covered contract language, clauses, types, and execution, and has answered many questions from those in attendance.

SPWA also hosted a virtual Lunch & Learn on November 14, 2023, titled, ‘Why Frustrated Operators do the Best Asset Management.’ We were pleased to have Wally Wells from Asset Management Saskatchewan on hand to provide lots of valuable information to the attendees, all stemming from his years of experience working with all levels of government and providing asset management consulting to groups such as the Federation of Canadian Municipalities (FCM).

On December 14, 2023, we held our last event of the year, which was another free Lunch & Learn on winter maintenance. Discussions focused on best practices, equipment, and materials, as well as the

many challenges faced by our ever-changing weather conditions.

Looking ahead, We are hosting our 65th Annual Conference & PWville in Saskatoon, February 27-29, 2024. The theme for the conference is *Connecting the World Through Public Works*. The conference will have a 0.6 CEU session, keynote speaker, roundtable discussions, and educational sessions on varying topics, as well as our annual tradeshow, PWville. This is a tremendous opportunity to take in great food, beverages, and have a greater connection with other public works professionals from around the province. Please register to attend.

Watch your email for more information on these events. Remember that the discounted rate members receive at our combined yearly events pays for the annual cost of membership with SPWA.

As you can see, SPWA is working hard 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 workforce of the future.

We also have to apologize that our website is not completely functional yet, as the upgrade has taken longer than planned. You can still visit our Chapter website at <http://saskatchewan.apwa.org/> 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



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A Message from the Manitoba Public Works Association

What an exciting start to the fall at PWX in San Diego and my first experience attending the American Public Works Association’s (APWA) annual conference. This amazing event gave us an extraordinary opportunity to network with other public works professionals and view a huge trade show, as well as hear experts speak on various topics. I strongly recommend others take the opportunity to attend in the future.

My commitment is to support all public works professionals by building strategic partnerships and working to provide more educational opportunities. Organizations like ours promote public works and lobby governments, cities, and municipalities to recognize their hard work, and we all need to stop and say thank you.

We want to make visible the value of your membership and will be reaching out to learn what is important to you and how we can work together to move public works forward. Your Board represents you as members, and your support is needed for the future success of various activities and committees. Watch for callouts – we are looking forward to providing opportunities for members to work on our committees, as this is an excellent way to build relationships, network, and seek out additional professional development.

Like the National Board of the Canadian Public Works Association (CPWA) advocates for public works with the federal government on the funding needs across Canada, we are here to work with the newly elected provincial government in Manitoba to advocate for public works agencies and supporting the acknowledgement of the importance of public works.

This year, the Province of Manitoba proclaimed National Public Works Week and had the Department of Transportation and Infrastructure join the Association as a group membership. This is critical to establishing a greater connection with the public on the value we provide to their daily lives.

Just like our chapter faces challenges increasing membership – and retaining members who join – public works agencies also face recruitment problems coupled with a growing demand. We look at Public Works Week as a tremendous opportunity to work with these

agencies and other associations and showcase opportunities to students, with the message that you can have a career right in your community after graduation.

The labour shortage is not only seen in careers as operators and other public works professionals, but in the registration at technical schools in civil technology co-op programs. In conversations with Certified Technicians and Technologists Association of Manitoba (CTTAM), there are several reasons for this, including COVID-19. During the pandemic, career fairs were no longer being held; they were a major source of outreach to schools. Our Chapter will continue to collaborate and explore partnership opportunities with CTTAM to see how we can work together to meet these challenges.

Another partnership has been with the Engineers Geoscientists Manitoba and its Manitoba Climate Resilience Training (MCRT) infrastructure project. Going forward, we will work with them on marketing training and visibility to our members.

Our Board is currently finalizing plans on how we can continue building recognition and strengthening partnerships, such as through our commitment to hosting the Mid-Canada Snow conference in the fall of 2024. Our Chapter has also updated our website and have established a Twitter and LinkedIn presence – take a minute and view what we are doing.

Another important win has been having public works professionals from one of the rural municipalities and the cities of Brandon and Selkirk to join our Board. This will provide us better insight to the needs and challenges municipalities of all sizes face. Our Board is becoming more diverse in backgrounds and professions and, with discussions with the Association of Manitoba Municipalities (AMM), we will explore hosting professional development events in conjunction with their convention and trade show.

Looking ahead, we face the challenge of the change of seasons. Our public works professionals – and especially our first responders – are once again put to the test as they battle the snow and ice. Thank you for what you do to keep us safe.

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

As we are now firmly settled into another winter season, most of our municipalities have shifted focus from construction projects and summer maintenance activities to finalizing their budgets and winter maintenance activities.

For public works teams, winter demands a unique set of skills to handle the various tasks required to operate and maintain the municipal infrastructure, 24/7.

Public works is a job that has purpose built right into it at every level but that doesn't mean that it is easy to show up to work every day. Keeping the water, wastewater, and solid waste disposal systems functioning, and the roads and sidewalks safe throughout the winter, might feel insurmountable after the challenges your team has already conquered during the spring and summer. Juggling the day-to-day demands, while also bearing the weight of public expectations and managing your staff, often leaves even the strongest leaders feeling overwhelmed at times.

That is why our convention in November featured a presentation on wellness leadership, which provided attendees with the skills and tools needed to be successful when it comes to identifying stress and struggle in themselves and their teams, and then how best to balance leadership and mental wellness.

Our mission at Alberta Municipal Supervisors Association (AMSA) continues to be to unite members towards individual development, improve 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 for the development of innovative ideas, as well as to offer various professional development opportunities.

Each year, AMSA hosts a spring and fall conference at the Edmonton Convention

Centre, with various presentations and guest speakers. Convention attendees review new legislation and technologies, as well as examine management strategies beneficial to both seasoned public works professionals and newcomers to the field.

We would also encourage public works professionals in our surrounding small urban communities to consider becoming a member or to attend one of our conventions. Our current membership is composed of public works leaders from rural municipal districts, counties, and specialized municipalities but, to grow as an Association, we would like to welcome additional members from small urban communities to join our organization.

The public works professionals from small urban communities face similar challenges and share the same concerns as their neighbouring rural municipalities, but will have a unique and fresh perspective on these issues. Becoming an AMSA member will provide the opportunity to meet your neighbouring public works leaders and form professional relationships with them within an informal setting. These relationships can prove to be a valuable source of information and will help foster and strengthen the connections between small urban communities and their rural municipal counterparts.

On behalf of AMSA and its more than 150 members, thanks go to our dedicated group of executive and directors and to the Associations' many sponsors. Sponsor contributions help sustain our operations allowing us to continue to provide two conventions annually, at no cost to members. I do encourage you to visit our website www.amsapw.ca and learn more about AMSA's 40-plus year history of advocacy, sharing best practices, and training.

Shaune Kovitch
AMSA President
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 A person wearing a heavy, multi-layered winter jacket, a fur-lined hat, and gloves is holding a large thermometer. The thermometer shows a temperature of approximately 10 degrees Celsius (50 degrees Fahrenheit). The background is a blurred, snowy or icy environment.

Winter Is Here: Stay Safe When Working Outdoors

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

It took a while this year, but winter eventually came to western Canada and brought with it cold air, wet weather, slippery surfaces, and blustery winds that would make any outdoor worker want to head indoors for a quick warm up. These kinds of unpredictable frigid conditions remind us about how working in the cold comes with its own set of unique challenges, which can potentially impact workers and their approach.

As such, it's important to consider worker safety when faced with the elements and, just like with the clothing that workers wear to keep themselves warm, these safety precautions will require a layered strategy.

A (counter) balancing act

To stay safe, each weather-related challenge needs to be counterbalanced with a protective measure. This approach includes providing proper insulation (such as layered protective clothing), performing physical activity (which could be the work itself), and

controlling the exposure to cold (like setting up an appropriate work / rest schedule).

When it comes to the first measure – protective clothing – there's a lot to consider, starting with understanding when workers need to be protected from the cold. If working outdoors, proper protective clothing is necessary if the temperature is at or below 4°C.

Workwear should be suited to the temperature, weather conditions, the type of work that's being done, and the activity level and duration of the tasks. In cold weather, it's important to think about the amount of heat and perspiration workers will generate. If clothing close to the skin becomes wet from sweat, the insulation value of the clothing drops dramatically – which brings us to our next point; how to dress.

The layered approach

How workers wear their clothing is just as important as what they're wearing. To boost insulation and subsequent protection, clothing should be worn in

multiple layers versus a single thick garment. Not only does the air between each layer provide better insulation than the clothing itself, but multiple layers can also give workers the opportunity to open or remove a piece of clothing or accessory before they get too hot.

Start small, end big. When layering, your outer layers should be larger than the inner layer. If your outermost layer is too tight or too small, it will compress the inner layers and decrease the effects of the insulation.

What's too cold to work?

In Canada, there are no maximum or minimum exposure limits for outdoor working environments. That said, there are various guidelines you can use to provide protection for those working outdoors. For example, in some scenarios where workers are doing continuous work in temperatures below the freezing point, you can have heated shelters or rest areas available for warming breaks.

Wind chill temperature can be used as a general guideline for deciding clothing

requirements and the possible health effects of the cold. Here are some tips for various wind chill temperatures:

- A wind chill of 0°C to -9°C creates a low exposure risk. Workers might experience a slight decrease in comfort and should dress warmly and stay dry.
- A wind chill of -10°C to -27°C creates a moderate risk. Workers may feel uncomfortable and see an increased risk of hypothermia and frostbite if outdoors for long periods of time without the appropriate protection. To lower the risks, workers should dress in layers of warm clothing with an outer layer that is wind resistant. Wear a hat, mittens or insulated gloves, a scarf, and insulated, waterproof footwear, and keep active while staying dry.
- A wind chill of -28°C to -39°C creates a high risk and exposed skin can freeze in 10 to 30 minutes and there is a higher risk of frostnip, frostbite, and hypothermia. Workers should cover all exposed skin, dress in layers, stay active and dry,

and wear a hat, mittens or insulated gloves, a scarf, neck tube or face mask and insulated, waterproof footwear.

Know the risks and what to do

Safety starts with education. Both workers and supervisors involved with work in cold environments should know about the exposure risks, symptoms of adverse effects, and what to do to keep workers safe.

In terms of pace, work should be done at a speed that avoids excessive sweating. If that's not an option, make sure employees get rest periods and can change into dry clothes. These rest periods can be part of a planned work / rest schedule which provides warm-up breaks in addition to their regular breaks.

Equipment design is also a factor in the safety of workers in cold environments. For work below the freezing point, metal handles and bars should be covered by thermal insulating material, and machines and tools should be designed so that they can be

operated without having to remove mittens or gloves.

Establish emergency procedures for working in the cold, so first aid and medical care can be provided or obtained if needed. This means every shift should have a minimum of one trained person who's assigned the responsibility of attending to emergencies. Workplaces can also implement a buddy system so workers can look out for one another and be alert for the symptoms of cold injury.

The lower the temperature, the higher the risks. But by understanding the potential for harm in cold environments and implementing the proper precautions, something else increases – workers' safety. ▀

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.

Look familiar?

A sign like this one indicates that you are near a pipeline right-of-way. To help protect the integrity of the pipe – and to keep you safe – contact the Operator to obtain a crossing agreement before driving, digging or constructing on or across the right of way.

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Taking Safety a Step Higher

By Alexandra Skinner, WorkSafeBC

Falls from ladders are a common cause of workplace injuries, particularly in cold and wet conditions. Every year, hundreds of workers are seriously injured from these incidents across Western Canada. In 2022 alone, WorkSafeBC accepted 806 claims related to ladder falls, including 287 serious injuries. Tragically, five workers lost their lives falling from ladders.

WorkSafeBC stresses that ladder-related injuries are preventable.

“Most of these incidents happen because of inadequate planning, training, or supervision,” says Michael Paine, Manager of Consultation and Education Services at WorkSafeBC. “On many job sites, using a ladder is so routine that people might not even consider whether it’s the best option for the task or if alternatives like work platforms, scaffolding or scissor lifts would be safer.”

Everyone has a role to play in ladder safety

Employers are ultimately responsible for the health and safety of all workers and must ensure that proper ladder training is given. Supervisors need to make sure that workers use ladders correctly, and workers need to follow safe ladder practices.

WorkSafeBC recommends that workers and employers plan ahead by identifying

hazards, assessing risks, and implementing safety measures before using a ladder.

Before you use a ladder, here are five questions to ask:

- 1. Do you really need a ladder for the job?** Think about whether the task can be done from the ground to reduce the risk of falling. If you can’t avoid working at heights, consider safer alternatives to a ladder, such as a work platform, scaffold, stairs, or a ramp.
- 2. If you must use a ladder, have you selected the right type and checked it for safety?** Make sure you inspect the ladder before use to ensure it’s in good working condition.

Choose the ladder that’s suitable for the task: The ladder should extend at least one metre (three feet) above the upper landing and secured in place if being used to access an upper landing. Always stay within the ladder’s weight limit – including your weight and the weight of your tools. Also consider the material of the ladder, as each type has its own characteristics and uses. Never use an aluminium ladder near electricity.

Stepladders are meant to be used for short-duration, light-performance work that is closer to the ground. For longer tasks, consider scaffolding or a scissor lift for safety.

- 3. Have you assessed the working environment?** Always place the ladder on a firm, level surface. If other workers, people, mobile equipment, or vehicles might pass nearby the ladder, use warning signs, pylons, barricade tape, or adjust the job schedule.

Avoid ladder work in severe weather like wind, rain, and snow, as they add hazards. Check for power lines and always keep a minimum three-metre distance.

- 4. Do you know how to climb a ladder safely?** Maintain three points of contact while climbing a ladder – two feet and one hand, or two hands and one foot, and always wear slip-proof footwear for added grip. Also avoid carrying tools or materials in your hands while climbing. Use a hoist, handline, bucket, or another device.

- 5. Will you need to reposition the ladder multiple times?** Avoid using tools that require a lot of leverage, since this can make you unbalanced or cause a fall. If securing the ladder each time is a hassle, consider using a scaffolding or a work platform.

More information about ladder safety can be found at www.worksafebc.com, including a risk assessment checklist for ladder safety. ▶

Alexandra Skinner is the manager, government, and media relations, at WorkSafeBC.



Municipalities Can't Afford **Not** to Do Asset Management

By Duane Nicol, Manitoba
Municipal Administrators

*This article first appeared in the 2023
Summer edition of the Municipal Leader.*

Whether you were elected for the first-time last October, or you are a returning member of council, you probably have at least a few key projects or initiatives that you would like to see your municipality undertake over the next four years. It's a safe bet that one or two – or maybe all of those projects – will require some sort of investment in the renewal, replacement, or new construction of infrastructure.

From improving the maintenance of mile roads to building new recreation centres to installing new wastewater treatment systems to replacing ninety-plus year-old pipe from aging water networks, there will be hundreds of millions of dollars spent by Manitoban municipalities over the next four years on the infrastructure that's needed to deliver on the commitments made during election time, as well as to fulfil the expectations of their citizens.

*A sizeable portion of
infrastructure across
Manitoba is in poor
or very poor condition
and will need to be
replaced now or in
the very near future
in order to avoid
service disruptions.*



Financial reality

When your council and administration completed their budget, the financial reality of these projects likely sunk in and may have raised a lot of questions. How are we going to pay for this? Even if we could afford to build it, where are we going to find the money to pay for its operation and upkeep? Which of these projects is the priority? Is borrowing to get this work done a good decision, or will it just saddle our community with debt for the next twenty years? Why didn't previous councils begin saving for this project a decade ago when it was first identified?

This is the point where more than a few council members have questioned whether

the elections results that put them into this were a blessing or a curse. But these are also the same difficult questions that your citizens elected you to answer.

Unless your municipality is growing rapidly and the growth in property tax revenue outpaces your community's needs, the costs of installing, maintaining, operating, and decommissioning municipal infrastructure are the headwinds you and your council will face during your term, and your community is not alone. The fact is, what we have been doing over the last 50 years isn't working – our infrastructure is getting worse, and we can't afford to keep throwing good money after bad using outdated thinking.

Canada's infrastructure gap

According to Statistics Canada, almost 62 per cent of Canada's public infrastructure is owned and managed by municipal governments and is valued at \$1.3 Trillion, or about \$85,000 per household.

Additionally, the 2019 Canadian Infrastructure Report Card says that a concerning amount (12-13 per cent) of infrastructure is in poor or very poor condition. This means the average Canadian household is served by about \$11,000 worth of municipal infrastructure that is in a state of serious decline and will need to be replaced now or in the very near future. What's more, the majority of infrastructure is currently in 'fair' condition, which means it will be poor soon. The report card also found that roads, municipal buildings and water and wastewater are the assets in the direst need of renewal.

There are no easy, 'silver bullet' solutions to this problem, but some municipalities are beginning to close the gap and using asset management to improve their infrastructure decisions; and it's making all the difference in the world.

Asset management is a paradigm shift

Asset management isn't a profession, it isn't a department, it isn't a plan, it isn't software, it isn't a set of tools, it isn't (just) a series of processes, and it isn't an ISO standard.

Asset management is a system of thought – a paradigm – and a new way of understanding how your people, processes, and tools interact to deliver services, and is the way we evaluate, interpret, and judge public needs. Asset management is the systematic practice of using human and financial resources to plan, source, construct, operate, maintain, renew, and decommission infrastructure and equipment to sustainably deliver municipal services that manage risk, achieve regulatory requirements, and meet the reasonable expectations of citizens.

Building asset management capacity in your municipality starts with the realization that it's going to take years to build a sustainable and effective system – certainly longer than a single term of office. That's okay

though; big things take time and the long-term benefits it will generate are worth it. It's a positive legacy your council can leave.

If your council has not yet talked about the status of the asset management program in your municipality, ask your CAO for a briefing. There is no time to waste, and four years will go by very fast. If you campaigned on providing better roads, better recreation facilities, sewer or water systems, or even lower taxes, then you'll want to be talking about asset management today. Investing in asset management is a strategic move. Take it upon yourself to learn more, give your staff ample time (and financial support) to learn and continue to develop your asset management program. ▶

Duane Nicol is the President of the Manitoba Municipal Administrators, the CAO for the City of Selkirk, and instructor of the Leadership in Municipal Management course at the University of Manitoba. Duane served three terms on Selkirk Council prior to becoming CAO.



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Upcoming Events

SPWA 2024 Annual Conference & PWville

February 27-29, 2024
Saskatoon, Saskatchewan

PWABC Women in Public Works Event

March 8, 2024
via Zoom

AMSA Spring 2024 Convention

March 19-20, 2024
Edmonton, Alberta

2024 North American Snow Conference

April 28 – May 1, 2024
Kansas City, Missouri

Manitoba Chapter Goldeyes Baseball

Public Works Appreciation Outing

Date TBA (During National Public Works Week)
Winnipeg, Manitoba

National Public Works Week

May 19-25, 2024

Manitoba Chapter's Golf Tournament at Bridges Golf Course

June 27, 2024
Starbuck, Manitoba

PWX 2023

September 8-11, 2024
Atlanta, Georgia

2024 Mid-Canada Snow Conference

September 18-19, 2024
Winnipeg, Manitoba

6th Annual PWABC & BCMSA Joint Conference

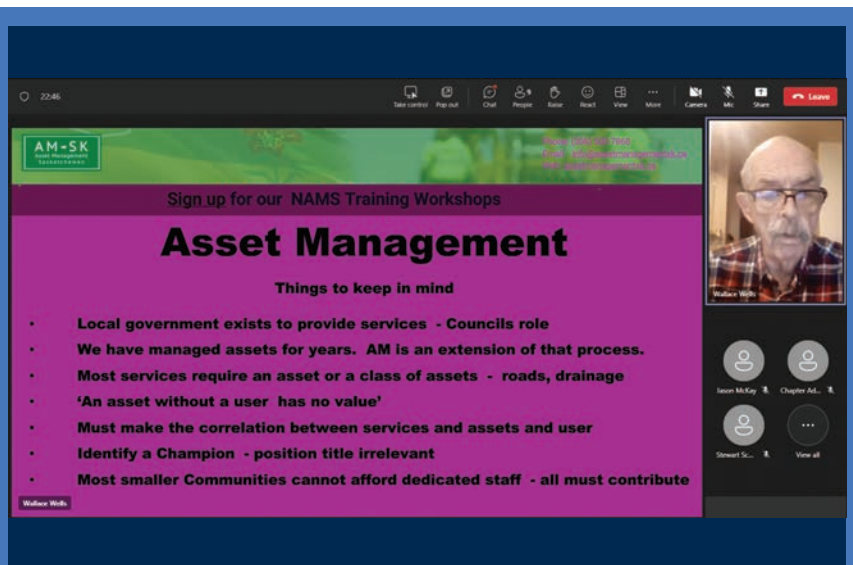
Date TBA
Penticton, British Columbia

ASMA Fall 2024 Convention

November 5-7, 2024
Edmonton, Alberta

Focus on Public Works

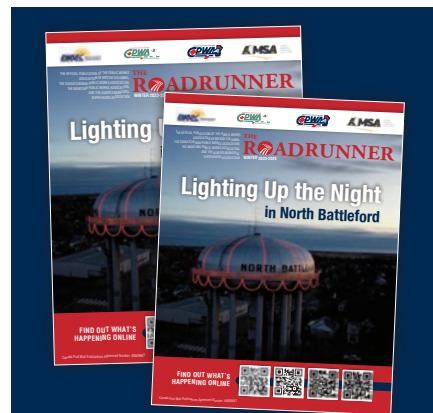
The American Public Works Association presents expert-led online education, trending technologies, resources, networking, and learning opportunities each month. Visit their website for the upcoming schedule.



SPWA Asset Management Roundtable

On November 16, 2023, Saskatchewan Public Works Association (SPWA) hosted another of our free informational roundtables titled 'Why Frustrated Operators do the Best Asset Management.' Wally Wells, famous for his extensive knowledge and experience in asset management (AM) in Canada, guided participants with some great examples and information on how communities can – and are – utilizing staff to determine and complete AM as it relates to operation and maintenance.

Thank you to Wally and all those who attended.



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 2024 editions! *All articles are subject to approval.*



Pictured here (L-R) John Elliot, Bill Sims, Riley St. Luke, Mike Anderson, Meryl Heinz, Michael Olson, David Myles, Marcus VanZyl, Brandon Miller

PWABC / BCMSA Joint Conference Awards

The Public Works Association of British Columbia (PWABC) recognized 11 Award winners at its PWABC / BCMSA Joint Conference, held on September 26-27, 2023, in Penticton, B.C.

The recipients were:

Project of the Year - Parks 2023
Bowen Park Trail and Utility Upgrade
 City of Nanaimo

Project of the Year - Public Works 2023
Proactive Street Infrastructure Maintenance and Asset Management with CityROVER AI
 City of Surrey

Outstanding Public Works Employee 2023
 Mike Anderson
 City of Nanaimo

PWABC Manager of the Year 2023
 Norm Dhillon
 City of Vancouver

Women's Public Works Ambassador 2023
 Kathy Tardiff
 City of Victoria

Dedicated Service Award 2023
Utilities Department
 District of Port Hardy

Innovation and Community Celebration Award 2023 (> 5000 population)
 City of Penticton

Innovation and Community Celebration Award 2023 (< 5000 population)
 City of Roseland

Emerging Leader of the Year - Lower Mainland 2023
 Mike Leong
 Township of Langley

Emerging Leader of the Year - Vancouver Island 2023
 Michael Olson
 City of Nanaimo

Excellence in Snow & Ice Control 2023
 City of Prince George

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Acquiring Public Rights Over Private Property: What Are Local

Governments' Options?

By Sonia Sahota & Marcela Ouatú, Civic Legal LLP

From time to time, local governments (LGs) may discover that a portion of their public infrastructure is situated within private property without the LG having acquired the necessary property rights. In such situations, LGs will want to consider options for regularizing their entitlement to use and access the property – or portions thereof – to maintain, repair, or replace the public works, provide access to others (contractors or the public), and eliminate the risk of future claims for trespass or damages.

The cause of such situations can vary from a surveying error or legal mistake to historical arrangements that may never be fully understood. The option undertaken to regularize the issue can vary as well – from steps taken on the basis of a mutual agreement (e.g. grant of statutory right of way) to unilateral steps taken by a LG on the basis of legal authority (e.g. expropriation).

Each scenario is fact-specific, and the potential solution will depend on various factors, including:

- The nature of the owner's interest in the land;

- The scope of use and occupation required by the LG; and
- The parties' relationship and respective bargaining power.

Negotiated agreements

An option to consider is the acquisition of fee simple title to the subject lands through a negotiated agreement with the private owner. Aside from the benefit of fostering a positive relationship with the owner, through a negotiated purchase, the LG secures certainty of costs and obtains an unrestricted ability to maintain and operate the public works and carry on related activities on the acquired lands. The parties may also negotiate a release from any claims for past trespass on and damages to the lands.

One of the disadvantages of this option is that the acquisition of a fee simple interest will require payment of greater compensation than would a lesser interest. Further,

a subdivision of the subject lands will be necessary, which will require the consent of all the registered chargeholders, which may be challenging or unfeasible.

As another option to the acquisition of a fee simple interest, in certain circumstances, it may be more advantageous for the LG to acquire a lesser interest, such as a statutory right of way (SRW). Under this option, a land subdivision is avoided, and a lower purchase price can be negotiated due to the more limited rights afforded by an SRW. Conversely, this option's disadvantages include: (a) the LG will not have exclusive possession of the subject lands; (b) the SRW will be subject to the prior registered encumbrances on title; and (c) the owner will be restricted in the development of its lands by the SRW while continuing to pay property tax for the entirety of the lands.

Another alternative option is a licence agreement, granting the LG limited access

and use rights. This option is best used when the LG requires rights over the private property for a short period of time. While this option benefits the LG via lower contract price and transaction costs (e.g. no survey or appraisal costs), it grants the LG only personal interests, that is, the licence is not enforceable against subsequent owners.

Expropriation

Quite contrary to the above-noted options is the LGs' acquisition of rights through expropriation that, in British Columbia, arise from the *Expropriation Act*.

The expropriation process is a multi-step process that is typically a last resort following failed attempts to otherwise reach a voluntary agreement with the property owner. It allows an expropriating authority to acquire a full interest (fee simple) or a lesser interest (SRW) in the subject property. An advantage of expropriation is the protection afforded by section 535(1) of the *Local Government Act* to the owner, whereby the owner is entitled to non-conforming use protection in the event that use of land or siting of existing buildings on the land cease to comply with land use bylaws due to the expropriation. However, non-conforming use protection will not apply if the owner has been compensated for their loss of regulatory land use compliance (s. 535(2)).

The most obvious disadvantage of expropriation is the fact that it is coercive and may not be politically attractive. Furthermore, in

an expropriation, there is great uncertainty as to the cost of the subject property. The cost is ascertained based on the information available to the local government (LG) at the time, which may be incomplete or incorrect. An LG would need to hire an appraiser to determine the cost; however, an appraiser is not always able to address all aspects of compensation available to the owner (e.g. the reasonable damages for the disturbance caused by the expropriation to the owner). Additionally, the owner has the right to bring a claim for further compensation after receipt of the original compensation. The risk of additional compensation claims and costs associated with inspections, appraisals, surveys, legal advice, and land title filings can all make this process quite onerous.

That said, there will be circumstances when the LG must proceed via an expropriation. In such cases, the LG should first consider whether the owner is agreeable to transfer the interest in the subject property through voluntary agreement under section 3 of the *Expropriation Act*. Under such an agreement, the owner agrees to transfer the interest to the LG on the basis that the LG will pay an advance payment, which the owner has the right to challenge by bringing a further compensation claim under the *Expropriation Act*. Under this option, the LG avoids the administrative steps and the costs of the expropriation process. Further, since it is less coercive, this option may be more politically palatable. A disadvantage for the owner under this option is the loss of entitlement to

non-conforming use protection, which owners may enjoy under a full expropriation.

In conclusion

In sum, when a portion of public works is discovered to be situated within land to which the LG has no legal rights, the circumstances should be considered to determine the preferred option. Some factors to consider when making the determination include the level of use of the lands required, timing, compensation, encumbrances on title, administrative and other costs (investigation, survey, appraisal, and legal costs), and political ramifications. In any event, LGs would be well advised to start with the options which are less coercive and that involve voluntary agreement between the parties. Even if the LG ends up proceeding with an expropriation, the information gathered during negotiations will serve the LG well. ▀

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 Sabota 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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TFSA vs RRSP:

What's Your Best Bet When it Comes to Your Income Tax Return?

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

Over the years, I have tried to instill the power of saving to all my clients. But the big question is, where to put the savings?

There are many options as to where to deposit savings, such as a savings bank account, chequing account, tax free savings account (TFSA), first home savings account (FHSA), or a registered retirement savings account (RRSP). For 2024, the new contribution limit for the TFSA is \$7,000 (total \$95,000), for the FHSA, it is \$8,000 (total \$16,000 if the account was opened in 2023), and for the RRSP is \$31,560 or 18 per cent of prior year's earned income. Each of these savings vehicles are suitable depending on personal financial goals and circumstances, which would – of course – influence the choice.

The big question of where to put the savings is especially relevant when my clients receive their income tax returns during tax time.

Two clients, different needs

Two of my clients – Daniel and Gwen (not their real names and who don't know each other) – both asked what to do with their income tax return this year.

Let's begin with Daniel. He was in his early thirties, earned \$45,000 last year, had some debts but has a manageable plan to pay them off slowly, and has always been diligent about saving.

Daniel had a simple yet clear financial goal in mind – wanting to build an emergency fund

The big question of where to put the savings is especially relevant when my clients receive their income tax returns during tax time.

and save enough for a down payment on a sailboat. He had taken a few mechanical courses and sailing lessons for many years as he wanted to eventually travel the world in his own sailboat. He knew it would be costly, but he was prepared by learning how to sail and knowing how to fix the craft – all he needed were the funds for his purchase. He also believed in the power of compound interest and wanted to make the most of his income tax return.

For Daniel, I recommended the TFSA to be the most suitable option. Here's why:

- **Liquidity:** The TFSA is incredibly flexible. Contributions made to a TFSA can be withdrawn at any time, for any reason, without incurring taxes or penalties. This was vital for Daniel as he needed easy access to his TFSA fund in case of an emergency.
- **Short-Term Goals:** Daniel's main financial objective was to save for a down payment on a sailboat and he planned to purchase a sailboat within the next five to seven years. By contributing his tax return to a TFSA, he could watch his money grow tax-free while also keeping it accessible for when he needed to use it.
- **Tax Benefits:** Daniel wasn't in a high-income tax bracket, so the immediate tax deduction that comes with RRSP contributions wouldn't provide as much benefit to him as it would someone in a higher tax bracket. The tax-free growth within the TFSA, however, would be more advantageous in his case.

Now, let's turn our attention to Gwen. She earned a



substantially higher income of \$130,000 per year, was in her mid-forties, and had been saving diligently for her retirement. Gwen was a frugal spender and had enough built up as an emergency fund. She had already contributed to her RRSP over the years, but she was also considering her options for her tax return. Gwen had long-term financial goals and was focused on retirement planning.

For her, I recommended the RRSP was the more appropriate choice, and here's why:

- **Tax Deductions:** Gwen's higher income placed her in a high tax bracket. Contributing to her RRSP would provide her with immediate tax deductions and reduce her taxable income for the year. This meant that she could potentially receive a larger tax refund, further boosting her retirement savings.
- **Retirement Planning:** Gwen was looking ahead to her retirement, which was a little over a decade away. She wanted to maximize her savings in a tax-efficient way. RRSPs are specifically designed for

retirement savings and can provide her with tax-advantaged way to grow her investments.

- **Long-Term Growth:** The RRSP allowed Gwen to invest her tax return in various assets like stocks, bonds, and mutual funds, which had the potential for significant long-term growth. The power of tax-deferred compounding over time would work in her favour.

In summary, the recommendations made for Daniel and Gwen were based on their individual financial goals and circumstances. Daniel chose to contribute his tax return to a TFSA because of its liquidity and suitability for his short-term objectives, while Gwen opted to put her tax return into a RRSP due to the immediate tax deductions and its alignment with her long-term retirement plans.

Ultimately the right choice depends on your individual situation, and it's essential to consult with a financial advisor to make the most informed decisions. Daniel and Gwen's stories serves as a reminder that

there is no one-size-fits-all approached to financial planning and the best path forward is one that aligned with our specific goals and aspirations. ▶

Charlene Birdsall, CPA, CMA, CIM, CFP, is a Wealth Advisor 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). The information contained herein has been prepared by Charlene Birdsall, a Wealth Advisor at NBF. The opinions expressed do not necessarily reflect those of NBF.

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Snow Problem for the City of Saskatoon

By Eric Quail, Lowell Reinhart, and Tracy Danielson, City of Saskatoon

The City of Saskatoon has received several requests in recent years to enhance its School Zone Snow Removal Program. Four primary factors may have contributed to the recent concerns:

- More snowfall accumulation than in typical winter seasons;
- Increased number of parents driving their children to school;
- Some schools with large and growing student populations sharing the same school zone; and
- Narrow streets adjacent to some schools.

What service level enhancement options for snow removal are available to improve traffic operations, safety, and parking availability within school zones? To answer this question, the City of Saskatoon has recently completed a project that involved a review of the current program and development of several program enhancement options.

After each snowfall, graders clear the snow from marked loading zones and place the snow in the parking lanes where possible. The City's current program consists

Two sets of options were identified that would improve traffic operations, safety, and parking availability within the highest priority school zones.

of a total of 103 schools (88 school zones) within six maintenance area contracts. Snow removal is activated when City inspectors confirm an average snow pile height of 0.6 metres or greater within a school zone and, once the contracts are activated, snow removal is typically completed within 72 hours. All work is completed at night by private contractors using maps with defined snow removal locations. To notify residents of the upcoming work, 'No Parking' signs

are posted 24 hours in advance of snow removal by the contractor.

Engagement sessions for this project involved both internal and external stakeholders through in-person and virtual meetings. Internal engagement included senior motor grader operators, Roadways management, and engineering support groups. External engagement included operating groups from the school boards as well as contractors for snow clearing and removal activities.

Response to the project

Multiple close-out meetings were held with the snow removal contractors at the end of the winter season, where they expressed that they felt that the program was efficient and effective. They also noted that the work notification and communication processes were sufficient, the 72-hour time frame to complete work was reasonable, and the yellow 'No Parking' signs worked well when posted a minimum of 24 hours in advance, and that there was high vehicle compliance. In addition, they found traffic and safety concerns were minimal because the work was completed at night when there is less traffic and schools are closed.

As part of the project, all schools were invited to complete a survey and provide feedback on the program. Key concerns raised by respondents were child safety, available parking, traffic congestion and school prioritization. In addition, 32 per cent of respondents felt that the average snow pile height of 0.6 metres for the trigger of snow removal is too high. Other concerns

were that the snow piles present a hazard to children who may walk on top of them and slide down onto the road, and that the piles cause traffic congestion due to the reduced usable road width.

To develop program enhancement options, a prioritization method for ranking school zones was developed. Each school zone was evaluated and ranked based on the following characteristics: school type (elementary or high school), enrollment, number of buses, and street width at the primary drop-off and pick-up locations. Some of the school zones are shared by two schools, and the seven highest priority school zones identified had one school zone for two schools.

Two sets of options were identified that would improve traffic operations, safety, and parking availability within the highest priority school zones. One set of options included using maps with defined snow removal locations and initiation of snow removal after every snowfall in excess of five centimetres, instead of using the average snow pile height of 0.6 metres as the criterion.

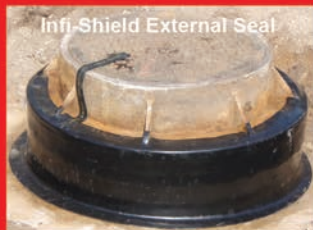
The other set of options involved increasing snow removal lengths to include the full school zone, as defined by the school zone signs, and initiating snow removal once the average snow pile height reached 0.6 metres.

Following the model of continuous improvement helped identify areas of improvement in efficiency, effectiveness, and safety for the school zone snow removal program and then, creating criteria that could be used to prioritize school zones, engage key stakeholders, and clearly communicating program objectives were found to be foundational elements in the development of the program enhancement options. ▸

Eric Quail, Lowell Reinhart, and Tracy Danielson all work at the City of Saskatoon and embrace continuous improvement as it empowers individuals, teams, and organizations to adapt, grow and excel within a changing environment. Eric is a Performance Improvement Coordinator; Lowell is a Senior Operations Engineer; and Tracy is the Roadways Manager.

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Precision Land Solutions comes in to lay drain tile down on either side of the road at the point where the grass meets the gravel, and then lets gravity do the work of removing excess moisture.

Photo courtesy of PLS.



Drying the Roads in Rural Manitoba

By Paul Adair, Staff Writer

One of the most significant issues facing Manitoba roads are frost heaves and boils, where poor earth material in the roadway absorbs water during the summer and fall months, freezes in the winter, and breaks up sections of the road – or turns them to mush – in the spring. While the frost damage can affect paved roads, the impact is most profoundly felt on gravel which can have dire consequences for the budgets of many rural municipalities, such as the RM of Rhineland.

“Recurring frost boils probably cost our municipality anywhere from \$25,000 to over \$100,000 whenever they happen, depending on how much moisture the soil has absorbed,” says RM of Rhineland Director of Operations, Craig Smiley. It’s also a problem that has become worse over time because of the heavier traffic we see on the roads, both in terms of traffic volume and the increasing weight of the vehicles themselves.”

Fortunately, a solution commonly used south of the border may provide the answer – drain tiles.

In 2022, the RM of Rhineland received \$4.8 million from the provincial government

“Recurring frost boils probably cost our municipality anywhere from \$25,000 to over \$100,000 whenever they happen, depending on how much moisture the soil has absorbed.” – Craig Smiley, RM of Rhineland

through its *Green Roads* initiative to fund the municipality’s *Priority Grains Roads* initiative. This pilot project consisted of approximately 35 kilometres of drain tile installed north of Altona, under some the highest priority sections of grain roads in the RM. Phase 2 of the project was completed in summer 2022, with Phase 2 finishing up in August 2023.

Repurposing old technology

Even though the use of drain tile is relatively new for Canadian roads – this is one of the first instances of it being used in Manitoba – the technology is fairly well adopted across rural Canada in the agricultural sector. In Ontario, clay tiles have been used to drain farmers’ fields for nearly a century.

“There are only a couple reasons you will find a puddle in a field – either the rain has come down so fast that it can’t infiltrate

the soil at the same rate, or the water table is too high for the soil to add more water to its holding capacity,” says Garnet Peters, President of AccuPipe and co-Owner of Precision Land Solutions.

Founded in 2006, Precision Land Solutions (PLS) is an agriculture water management company that provides surface and subsurface solutions (drain tile) to Manitoba, Saskatchewan, and northwestern Ontario. Located in Winkler, Manitoba, a sister company was added in 2012 – AccuPipe – to manufacture corrugated pipe products for agriculture, the building trades, and the construction market. Together, the two have become a turn-key solution for all of southern Manitoba’s water management needs.

The use of drain tiles helps to generally lower a field’s water table down to approximately three feet below the surface, where

underground infrastructure draws excess moisture into a network of pipes and collecting laterals and runs it down to a main outlet or pump. This process helps to create optimal growing conditions for the growers' crops.

"It's like when you have plants growing in a pot, which typically have holes drilled in them to drain away the excess water," says Peters. "In layman's terms, that's basically the purpose of installing drain tile – we control the water table and remove the saturated moisture from the soil to make sure plants have what they need to grow better for the farmer. We took the same principles and applied it to the roads."

The drain tile uses gravity to move water and the pipes are sloped. As such, PLS took significant time to properly survey and design the project before any shovels hit the ground. The company also needed to determine the best way to take advantage of natural outlets – like creeks, ditches, and ravines – in which to divert the excess water. Only then did PLS come in and lay drain tile down on either side of the road at the point where the grass meets the gravel.

Work on the *Priority Grains Roads* initiative was informed by earlier work done by PLS in the RM of Stanley, where the company laid down 2.5 kilometres of drain tile in 2013.

"From my own observations driving down the road, I would say it was 90 per cent better than it used to be – it has completely firmed it up and the frost boils are pretty much gone," says Peters. "That's exactly what we want to see happen in the RM of Rhineland by getting rid of that moisture and keeping the roads firm and solid and give it more of a chance to hang on."

The future of drain tile in Manitoba

With the drain tile now installed and the snow starting to fly in Manitoba, all that's left to do is to wait until spring to see results. But, even then, depending on the winter conditions it may take several years to gauge whether or not the project was successful. And while this particular project might be one-and-done, should the use of drain tile prove successful in removing excess moisture from under the roadway, it may spur additional investment in the technology across rural Manitoba – especially as agricultural equipment in the province continues to become bigger and heavier.

"If the project is a success, the cost of installing drain tile will more than offset the cost of recurring road repairs every year, so it's really a no-brainer," says Smiley. "Looking ahead, I can see us going full force and doing the whole RM and I know our neighbours are sitting back and seeing what's happening here in the RM of Rhineland, I can definitely see other RMs jumping on board if it works."

Peters agrees and says, "While it's not common practice here and isn't part of our infrastructure culture, I would even venture to say almost every Interstate highway across the United States has drain tile installed. We can look to their experience to improve the conditions of our gravel roads and, looking ahead, I think we will see a lot more projects like the *Priority Grains Roads* initiative coming up in the near future." ▶

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When complete in 2025, the new Roads facility in Wood Buffalo will significantly improve operations and efficiency for the RM, while also providing spectacular views of Fort McMurray's landscape. Photo courtesy of the RM of Wood Buffalo.

A New Roads Facility for Wood Buffalo

By Keith Smith, Regional Municipality of Wood Buffalo

Currently located at 24 Silin Forest Road, the existing Roads facility in the Regional Municipality of Wood Buffalo (RMWB) in northeast Alberta – also known as the Roads Satellite Yard – has reached the end of its useful life and needs to be replaced. As such, the decision was made to build a new operations centre – the Public Works North Facility.

Construction of the \$52 million project commenced in August 2022 and is planned for completion in April 2025. Strategically located north of the downtown core to provide central access to both the north and south, the project includes a new two-storey 27,000-square-foot administration and maintenance facility, as well as a one-storey 36,000-square-foot heated equipment storage facility and associated site development. It will also house the municipality's Roads Department and have areas for Parks and Fleet.

Other features include:

- Maintenance building including wash bay for light vehicles, a garage bay, and six maintenance bays.

- Administration building with offices, workstations, meeting room, lunchroom, locker room and change room.
- Heated vehicle storage building with heavy vehicle wash bay, storage space for 28 vehicles (seven bays).
- 142 onsite parking stalls for vehicles and equipment.

The re-development of the site will improve operations by centralizing the Roads branch functions, improve the Parks branch operational efficiencies, address environmental non-compliances, and establish a refined yard for support, municipal vehicle fueling, and equipment and materials storage.

“There will also be significant cost savings in the operation and maintenance of the Roads equipment by storing the Roads equipment inside, as well as have a positive effect on the environment by reducing idling,” says Public Works Director, Keith Smith. “In addition, having a new maintenance garage will allow mechanics to complete repairs on site, rather than transporting it back and forth from the south operations centre.”

Challenges encountered

The project to date has met a number of challenges that have, fortunately, not significantly hampered schedule or budget. These challenges included:

- The slope of the landscape provided some unstable soil conditions and, as issues came up, it was necessary to remove more existing clay and replace it.
- The cost and schedule delays because of the unknown sub soil condition during construction of the deep utilities was very common. To address this issue, a phasing plan was included in the construction tender, which requires all the underground works to be completed early in the project.
- Site Zoning was initially Direct Control, which necessitated that an application to council be put forth in 2021 to change it to Public Service. This allows for future upgrades and expansion on the site as needs change.
- The site did not have access to water and sanitary services. The nearest water and sanitary tie in points were identified early in the design and included in the project

scope and budget. This includes construction of approximately 400 metres of off-site water main, a pressure reducing station (PRV), and a sanitary lift station.

- Timely relocation of the Roads sand and salt storage Quonset, or sprung structure, was critical for the Public Work's winter maintenance program. Identifying this as priority and stipulating the completion date for this task in the tender document, the contractor was able to plan and complete it on time.
- The project site is an active operations yard for both Roads and Public Works, and the fuel pumps located in the yard also remains open to various municipal groups. To ensure uninterrupted operations of the Roads services during construction, necessary provisions were included in the construction contract.

An abundance of nature

The new centre provides views out towards the Athabasca River and captures the beauty of the Fort McMurray landscape. As well, the abundance of nature that surrounds the facility was paramount to the project's design. The building's angled roof connects visually with the sloping hill and integrates the form into nature, which allows for substantial glazing facing towards the river and trees on the north, east, and west.

Because of the project's embracing of nature, every consideration was taken to

ensure the facility meets – and even exceeds – current Alberta energy codes. The landscape design also controls the flow of rain-water through the site and the project calls for a holding pond to ensure that salt that is stored on site and will not flow down to the river.

When complete, the new Public Works North Facility will improve operational efficiencies within RMWB, reduce maintenance costs, and align with asset management initiatives, such as building and equipment life cycles. What's more, given the limitations of the old facility and

the implications of Bill 8 and Bill 21 on RMWB revenue streams, this is the perfect time to construct the new Public Works North Facility.

"If we were to hold out on this asset replacement, it is possible we would not have the funding available in the future to facilitate the asset replacement," says Smith. "Any failure to sustain assets could result in unsafe and unhealthy work environments for the staff, increased operational expenses, increased maintenance costs, and a negative impact on our corporate image in Wood Buffalo." ▾

Lighting Up the Night in North Battleford

The lights of North Battleford's water tower can be seen for kilometres in every direction and, for more than 35 years, the lit-up water tower has been a landmark for the city. Photo courtesy of City of North Battleford.

By Candace Toma, Public & Intergovernmental Relations Coordinator, and Stewart Schafer, Director of City Operations, City of North Battleford

To celebrate the City of North Battleford's 75th year of incorporation in 1988, the city's Fire Department installed incandescent lights along water tower, which were secured every two feet to steel cables that ran from the top of the tower, down to the catwalk, and around the bowl of the water tower. At the time, the lights were only to remain lit for a one-year period, however, due to the praise that City Council and Administration received for lighting up the water tower, the lights remained on and have become a symbol for North Battleford.

Soon after the lights were installed, it became apparent the glass incandescent bulbs would be an ongoing issue whenever the city experienced high winds or hailstorms. The glass would break and shower the neighborhood with glass shards. This resulted in the Fire Department having to access the top of the water tower every year to change out broken or burned-out light bulbs, as well as re-fasten the light cables where any zip ties were broken. In later years, the incandescent lights were replaced with clear, incandescent exterior residential Christmas lights. Although this reduced the number of bulbs that were broken throughout the year, the Fire Department would

still occasionally have to climb the water tower to change the bulbs. In addition, the Christmas light strings needed replacement due to broken electrical conduits and repairs were also required when light strings became too brittle due to ongoing exposure to ultraviolet (UV) rays.

The switch to LED

In 2008, a funding committee was formed to replace the residential incandescent Christmas lights strings with LED strings. Because the LED bulbs were not as bright as the incandescent bulbs, they were organized into groups of four for each light point and installed in September 2009. Although the City found that the new plastic LED bulbs were able to withstand the harsh prairie weather conditions, the bulbs did not produce enough heat to melt the snow accumulating around the bulbs in the winter months. Administration received several calls from the public throughout the first few winters that the LED light bulbs were 'burned out,' when they were simply snow-covered. Administration did not deploy City workers to clean off the snow from the lights due to the hazardous conditions related to climbing the water tower during the winter.



Seen from above, the new lights can display 16 million possible colour combinations, which will be used to mark specific events, holidays, and remembrances throughout the year. Photo courtesy of City of North Battleford.

The LED lights had a predicted lifetime of 10 years, which would have required the light strings to be replaced in 2019. However, while it was noted that the LED bulbs had yellowed and dimmed in intensity during the years of UV exposure, the light from the LED light bulbs were still shining bright enough to be seen for miles, so the lights kept shining until 2023. In the spring of 2021, it became apparent that a replacement plan for the lights on the water tower was needed after the City's electrical contractor advised that further repairs to the light cables would not be possible due to

the frequent need for major repairs. At that point, Administration notified City Council that the contractor could no longer keep the lights lit on the water tower and that they would be turned off the next time there was a major issue.

This decision was met with significant feedback from the community, and City Council supported the development of a long-term solution to maintain the water tower lighting. Council approved Administration's budget request for the 2022 Capital Budget to replace the water tower Lights.

What to do about the lights?

In 2022, Administration contacted AECOM to assist with determining options for the water tower light replacement. AECOM developed the following 4 options:

- Let the water tower go dark.
- Install exterior flood lights around the water tower.
- Install white LED strip lighting on the water tower.

- Install LED strip lighting on the Water Tower that could change colours.

Although the fourth option was the most expensive of the proposals, due to the substantial upgrade to the lighting capabilities for the Water Tower, City Council and Administration felt that this option would give the City the opportunity to celebrate and honour specific dates and events.

City Council was presented with these options and associated projected costs, after which City Council directed Administration have the coloured LED strip lighting installed on the water tower. When working with engineering professionals to finalize the installation if the lights, it was determined additional supports were required for the design, creating additional expense for the project which was funded by a generous donation from Cenovus Energy.

The installation of the new water tower lights began in early September 2023, with the removal of the old lights and the addition of the new LED strip lighting.

On September 29, 2023, representatives from the City and Cenovus Energy were on hand to officially unveil the new water tower lighting. During the ceremony, a demonstration of the possible 16 million colour combinations that could be produced were displayed to those in attendance. At the conclusion of the ceremony, the water tower lights were turned to orange in honour of the National Day for Truth and Reconciliation, and remained orange until midnight of October 1st, at which point the lights turned back to their usual warm white colour.

A policy has been developed by City Administration to determine how and when the water tower lights will be changed from warm white to another colour or colour combination. The water tower shall be lit white and return to white following each occasion.

In this way, the City of North Battleford believes that the water tower lights will continue to shine as a bright beacon over the community for many years to come. ▶

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Pro-Eco-Lite headwalls are lightweight engineered inlet and outlet control structures used for flood, stream, erosion, debris safety, and animal control in pipe end systems. Photo courtesy of CIF Composites.



Pro-Eco-Lite service boxes and vaults combine the strength of concrete with the lightweight characteristics of plastic. Photo courtesy of CIF Composites.



By Paul Adair, Staff Writer

Founded in 1973, CIF Composites Inc. is a Canadian manufacturer of the Pro-Eco-Lite line of composite-reinforced polymer concrete products, such as headwalls, junction boxes, service boxes and vaults, and pilasters and guards. The company employs 14 and operates out of a 14,500 square foot facility in Saanich, British Columbia, within the Greater Victoria Area. This facility is comprised of four ‘bays’ where CIF products are manufactured, stored, and are shipped across North America, primarily to British Columbia and Alberta, but also to places like Texas, Maine, California, Minnesota, and everywhere in between.

“We started out manufacturing junction boxes locally for BC Tel, which was looking for something that was lighter than concrete and easier to install, and the business has just expanded from there,” says Brian Lewthwaite, Director at CIF Composites.

Even though the company is able to provide customized design and manufacturing products for large-scale civil engineering and construction projects, such as the façade restoration of Victoria’s Hudson Bay in 2008, the vast majority of CIF’s products are purpose built to the standards required by the customer.

“One customer – BC Hydro – came to us and said, ‘These are the sizes we want. This is what we want them made of. We want it to absorb an impact of five miles per hour and this is the material thickness we would like,’ and that’s what we provided,” says Lewthwaite. “The same with Telus, we asked what kind of sizes they were after, and then we built it to suit their needs. By working closely with the customer, we learn what their needs are and make our Pro-Eco-Lite products to fit.”

What is composite-reinforced polymer concrete?

Traditional concrete – like the kind poured to make sidewalks – is made up of cement, water, sand, and gravel. The composite-reinforced polymer concrete that is at the core of

most CIF products are a mix of aggregate and resins that are bound together with a polymer binder. This polymer concrete core is then surrounded with layers of fiberglass and gel coat. When packed together, it results in a drier mix that cures significantly faster and performs as well – if not better – than what most people think of when they think about concrete.

“Something like a traditional concrete headwall has to be grouted in place, so it’s got to be kept dry and needs significant time to cure – especially for larger pipe diameters. With Pro-Eco-Lite products, we ship them out to the site and it’s ready to install,” says Lewthwaite. “What’s more, our headwalls feature a pipe-to-pipe connection, and we will typically match whatever pipe type is in the field to whatever is on the back of the headwall, which makes for a quick and easy installation.”

Although there is a slightly higher price point, composite-reinforced polymer concrete more than pays for itself in the long-term thanks to its high durability and resistance to corrosion, which reduce the costs associated with ongoing maintenance.

“If you were to drop a precast junction box out of the back of a truck, it might break in pieces and would need to be shoveled off the ground,” says Lewthwaite. “With our product, the integrity of the structure would not be compromised, and our product would remain intact and ready to install.”

CIF Pro-Eco-Lite products are also much lighter than their precast counterparts – only about a 10th of the weight of a similar precast product. To compare, CIF’s Series 3 headwall, which would attach to a 600-millimetre diameter pipe, weighs around 278 pounds. A similar precast headwall doing the same job would be approximately 4,500 pounds.

Using a lighter weight material is safer and easier for public workers to work with, saves labour costs, and requires lighter equipment to move. Weight consideration is also required when working in certain soil conditions, such as in soft and boggy soils. A traditional precast headwall would tend to sink and break off the existing

drainage pipe, which would create a myriad of other issues. In this case, a lighter option – like CIF’s composite-reinforced polymer concrete – would be the more preferable product of choice.

This was the case at Tsawwassen Shores in Delta, British Columbia. Here, CIF provided all the headwalls on site, which is located on a sea delta and where there was no option to use heavy precast products.

“When we visited the site to watch the installation of the Pro-Eco-Lite products, they had the headwalls and pipe above the ditch and were able to sling them into place with just backhoes before the excavators came in to backfill everything,” says Lewthwaite. “The contractor appreciated how fast and smooth the process went and commented that it felt almost like a manufacturing operation.”

A concrete disruption

The challenges facing a greater adoption of composite-reinforced polymer concrete are twofold. First, while CIF

Composites has been in operation for the last 50 years and their Pro-Eco-Lite products continue to perform well, many traditional concrete products have been in use for nearly a century and still hold up to this day. The second reason can be attributed to old-fashioned resistance to change.

“Change is hard, and precast is so ingrained into how people do things that introducing something new can be even tougher,” says Lewthwaite. “Going forward, even more education needed to let people know about their options. We feel that precast still does – and always will – have its place, but Pro-Eco-Lite provides a choice that is lighter, more durable, and easier to install. But we know that the more people who see our polymer concrete products in action, the more they will be willing to make the switch.”

For more information about CIF Composite Inc. and its line of Pro-Eco-Lite products, email info@cifcomposites.com or check them out online at www.cifcomposites.com.



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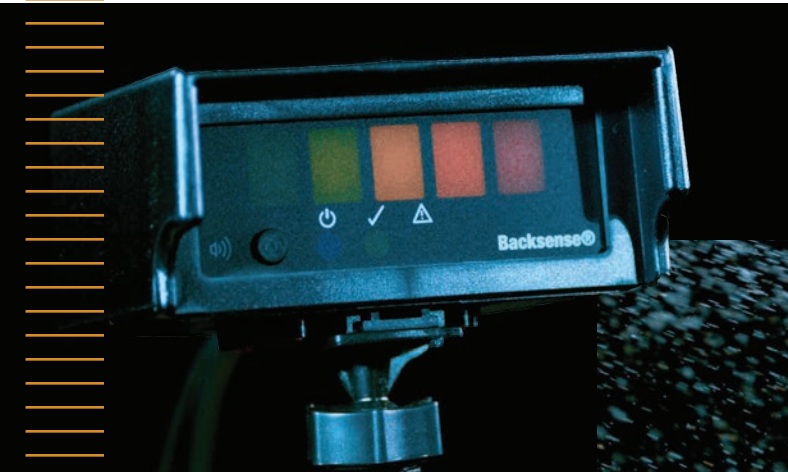


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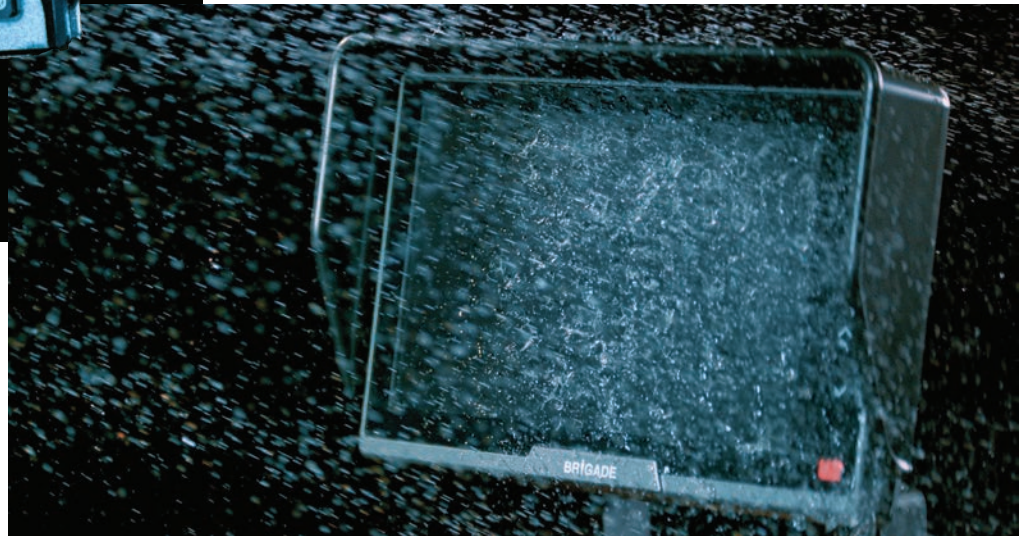
Using the Right Safety Technology Protects Road Construction Workers' Lives

By Paul Adair, Staff Writer



LEFT: The Backsense® radar obstacle detection system and heavy-duty camera system eliminates blind spots and allows drivers to monitor their surroundings more closely – mitigating dangerous encounters before it's too late. Photo courtesy of Brigade Electronics.

BELOW: Brigade products – like this display monitor – are known for their extreme durability and their ability to withstand even the most extreme work site. Photo courtesy of Brigade Electronics.



While roads have been made safer than they have been in years for users, road construction remains an extremely hazardous occupation. Road construction workers tend to their jobs in demanding environments. Alongside the potential for extreme weather conditions and the debris that comes with the job, more road construction is taking place at night and, while this minimizes the disruption to road users, it does increase the safety risks for workers, creating extremely hazardous conditions.

According to WorkSafeBC, in British Columbia alone, nine roadside workers were killed and hundreds more were injured over the last decade after being struck by a vehicle while on the job.

By eliminating blind spots on commercial vehicles and providing real-time and reliable alerts to drivers when there is potential for a collision, technology is critical to reducing instances of death and injury for road workers.

“While passive systems, such as mirrors and cameras, do help the driver to spot people and objects in blind spots, utilizing proactive technology that site managers can rely on to provide reliable alerts, no matter the conditions, are key to protecting the lives of road construction workers,” says Warren

Di Marco, CEO of Brigade Electronics Canada. “There are safety device options that are resilient to demanding conditions and these can be relied upon to continue to protect workers during low light, loud noise, high and low temperatures, and when visibility is compromised. It’s these types of tough products that should be used to protect the lives of road construction workers.”

Founded in 1976, Brigade Electronics is a worldwide market-leading provider of safety devices and solutions for commercial vehicles and machinery. Brigade’s products work to reduce the risk of collisions and protect vulnerable road users by minimizing vehicle blind spots and assisting drivers to maneuver safely.

Brigade’s product portfolio includes 360-degree camera systems, camera monitor systems, White Sound® reversing alarms, obstacle detection sensors, obstacle detection radar, and digital recorders – products all

designed with the ultimate goal of saving lives when it comes to working in and around commercial or industrial motor vehicles.

Like having eyes in the back of your head

With a Backsense® radar obstacle detection system and heavy-duty camera system, such as the Backeye®360, blind spots are eliminated. The system will identify people and objects, whether stationary or moving, and provide the vehicle operator with in-cab visual and audible alerts, even in difficult environments.

The value of the system is twofold. It saves money on a project by reducing the number of collisions – and resulting costly damage to vehicles – with stationary objects. More importantly, however, the Backsense® radar obstacle detection system saves lives.

“For a garbage truck, as an example, the vehicle backs up with limited visibility,

the Backsense and camera system will warn the driver inside about objects or people behind them if they are getting too close,” says Di Marco. “Saving lives and stopping people from getting injured by being hit or run over is what the Backsense system is all about, and it benefits any workplace where vehicles and workers work in close proximity with each other.”

Cutting through the noise

Simple reversing alarms have long been a solution to alerting those on the ground. However, research has shown that old-fashioned tonal – or back up – alarms – may be only adding to the problem, especially in tough and noisy environments where it is not always easy to locate the direction from which the alarm originates. Multi-frequency alarms, such as Brigade Electronics’ bbs-tek® White Sound® reversing and warning alarms, are helping to solve this issue.

Rather than the traditional ‘beep’ of tonal alarms, they create a ‘ssh-ssh’ sound which dissipates quickly, meaning the alarm

can be instantly located and heard in the danger zone.

“All the tonal alarm does is provide a non-directional sound and when it goes off, you really don’t know where it’s coming from,” says Di Marco. “If you hear an ambulance in the distance while driving and you look around, you’ll see everybody else doing the same to see where the siren is coming from. It’s the same idea on the job site, where many workers will just ignore the sound because it could be coming from anywhere and there could be multiple alarms going off at the same time. They may not even notice the noise until it’s too late and the vehicle is pretty much right on top of them.”

A white noise alarm operates on a different audio frequency and the sound is directional. As such, there is no question as to where the vehicle is coming from because only the people behind the vehicle are able to hear it.

The future of safety

Looking ahead, Brigade will continue to push the envelope where safety and

technology meet. The company will soon introduce a new, 77 gigahertz Backsense system that is approximately 30 per cent smaller than current models but has more features that allow drivers to see farther back with greater widths, without sacrificing any of the durability Brigade products are known for.

The company also recently launched its game-changing artificial intelligence (AI) cameras that are specifically designed to increase safety for commercial vehicles and those who work around them. The AI cameras use a high-definition (HD) camera with embedded processing power to identify human shapes both accurately and quickly within the detection range, significantly reducing false positive warnings.

“If I’m driving forward or backward, the AI camera can actually locate a person on site and let me know if they’re within the danger zone, marked green, yellow, or red, and warn me that there’s someone there who I need to watch out for,” says Di Marco. “We’re excited about what the future holds for improving safety for road construction workers.”

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