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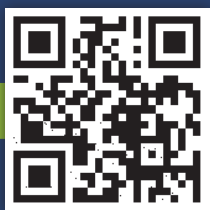
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All members of a CPWA chapter are members of the American Public Works Association (APWA). As a member, you share common goals, challenges, and solutions with other public works professionals throughout North America. To find out more on member benefits,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

A Message from the Canadian Public Works Association

I have been President of the Manitoba Chapter twice and I thoroughly enjoyed the experience of working with the Board, as well as other public works professionals in our province.

I have been both humbled and honoured to be the President of the Canadian Public Works Association (CPWA) this past year. I have been President of the Manitoba Chapter twice and I thoroughly enjoyed the experience of working with the Board, as well as other public works professionals in our province. They were the ones who inspired me to continue joining various committees and pursuing other challenges, such as participating in CPWA on the national level. I was quite happy to do that and expand my public works experiences across Canada.

Fortunately, I have been able to visit other chapters this year and have seen firsthand the similarities and differences from both coasts. Talking to the Directors from the CPWA Board and hearing their concerns and how they are dealing with floods, fires, and other emergencies along with the everyday public works issues, has opened the door to other solutions for dealing with the problems we all encounter.

It is a great honour being President of this association. My role as President has given me the opportunity to enhance our association and with our advocacy in Ottawa it continues to bring the CPWA the respect that it deserves. While we are a part of APWA and I appreciate their assistance, we are also representing our country and should never lose that perspective.

The CPWA takes good public works people and makes them better. They provide the services that so many of the public take for granted and come to expect on a daily basis without considering the efforts and sacrifices it takes to have the streets cleaned after a midnight storm, having the water and sewers flowing or any other public works responsibilities.

Thank you for your commitment to your community.

Steve Blayney

President

Canadian Public Works Association

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A Message from the Public Works Association of British Columbia

All communities large and small across our province participated in this great opportunity for all of us to showcase the importance of our profession.

For the first time in recent memory, the vast majority of our public works crews across the province were spared from severe spring flooding. This gave our teams the opportunity to focus on National Public Works Week (NPWW). All communities large and small across our province participated in this great opportunity for all of us to showcase the importance of our profession. We look forward to seeing the highlights and we will host a feature in our winter edition.

Our second annual joint conference with the British Columbia Municipal Safety Association (BCMSA) will be hosted in Penticton and we are looking to build on the success from last year. I would like to personally thank the Penticton team, our board, the BCMSA team and all the volunteers for their dedication and hard work to make this Conference a success. On behalf of our board, I would like to sincerely thank our Executive Director, Ashifa Dhanani, and BCMSA's Executive Director, Mike Roberts, for

their ongoing leadership to ensure this partnership is successful.

In preparation for the coming winter, we encourage you to register for our upcoming Winter Maintenance training opportunities. We are hosting the training in two locations, one in Burnaby and one in Fernie. Both locations will be offering the APWA Winter Maintenance Supervisor Certificate and the Operators Certificate. On behalf of the board, we sincerely thank the host cities for their facilities and their volunteer efforts.

This is my last message as the President of PWABC. I'm truly excited about the future of our association. We have a strong board with a variety of skill sets that will serve our members well. Our Executive Director, Ashifa Dhanani, as always and into the future, will be an excellent leader and resource for our members.

I feel honoured and proud to have served as President on your behalf.

Matthew K. Brown

President

Public Works Association of BC

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The APWA Alberta Chapter hosted the Western Canadian Snow Conference in Edmonton, on June 4-6, 2019, for the first time, and we had a great turn out!

hope everyone was able to celebrate National Public Works Week in some way. Thank you to all that proclaimed NPWW in 2019.

The APWA Alberta Chapter hosted the Western Canadian Snow Conference in Edmonton, on June 4-6, 2019, for the first time, and we had a great turn out! Thank you to the conference committee who did a great job. The snow Roadeo was a huge success despite the wet weather. Thank you to all who competed.

The winners in the single axle plow were: 1st, Keith Bedford, Carmacks Maintenance Services; 2nd, Paul Shave, City of Fort Saskatchewan; and 3rd, John Watson, City of Red Deer. The winners from the grader competition were: 1st, Jason Gamracy, Town of Vermillion; 2nd, Bruce Classen, City of Edmonton; and 3rd, Sonny Quigely, City of Fort Saskatchewan. A big thanks to Joe Guido and his awesome Roadeo Committee!

It couldn't have happened without you.

We would also like to say thank you to The City of Edmonton for allowing the APWA Alberta Chapter to use their equipment for the snow Roadeo! On that note, our 22nd annual Equipment Roadeo is on September 5-6, 2019, in Red Deer, so come out, compete and show off your skills!

We are very honoured to be receiving the Presidents Award of Chapter Excellence at PWX in Seattle, September 8-11, 2019.

This award recognizes the APWA Alberta Chapter for contributions made to positively impact our membership, profession, and community. We also are hosting the Western Canada Chapter Dinner at the Mariener's Game – should be a great evening!

Mark your calendars for October 7-9, 2019 for our Annual Excellence in Public Works Conference in Red Deer! This year the theme is "Healthy Communities start with Public Works." This theme represents the many facets of modern civilization that grow out of the efforts put forth by the public works professionals in our communities. As always there is a great line-up of technical sessions, a Public Works Admin Professional workshop, a fantastic tradeshow, and networking opportunities.

We will have a full schedule of Public Works Supervisor courses coming up this fall and winter. See the website for details: www.publicworks.ca.

Thank you to the Board of Directors, our committee chairs and Executive Director for all their hard work and support. If you are interested in volunteering on a committee, please contact Jeannette Austin at admin@publicworks.ca and she will work with you to find the right fit.

Peter McDowell

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Time seems to go by very quickly these days as summer is here already. Kids are out of school and it is time to take a vacation and enjoy some well-deserved time off. This year's weather has already proven to be very dramatic with drought then a month of rain in a weekend and hot and cold extremes. Public works professionals are attending to it all with each discipline having its own challenges.

The SPWA hosted our National Public Works Week (NPWW) Workshop on May 23rd in Regina, with the theme being Public Works Basics. Covered were topics that sometimes are not on the top of mind in various-sized communities such as: Water / Wastewater Compliance, Safety Management Plans, Insurance Requirements, Injury Rates and Incident Investigation. There were great speakers, lots of discussions and even a question on texting while in your boat! So, no topic was left uncovered. Twenty-two delegates attended from around the province to help celebrate NPWW.

The SPWA solicited municipalities to proclaim NPWW, and a record 23 did (along with the provincial government). Doing so got the community entered into our draw of a free registration to one of our four annual events. The winners were: Equipment Expo & Golf Tournament, City of Moose Jaw; Fall Workshop (Winter Maintenance), City of Warman; Annual Conference & PWville (2020), Town of Battleford; and NPWW Workshop (2020), Town of Nipawin.

Our Fall Workshop will be the APWA Winter Maintenance Supervisor, and Operator Certificate Programs. This will be held at the Saskatoon Inn on September 19, 2019. Details are being finalized and information will be emailed out and will also be added to our website. Reviews of these programs have been good, so mark the date in your calendar, just in time for winter program preparation.

Preliminary planning is also taking place for our Annual Conference in Regina, at the Delta Hotel by Marriott, on February 25-27, 2020.

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 the SPWA is endeavouring 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 working 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.

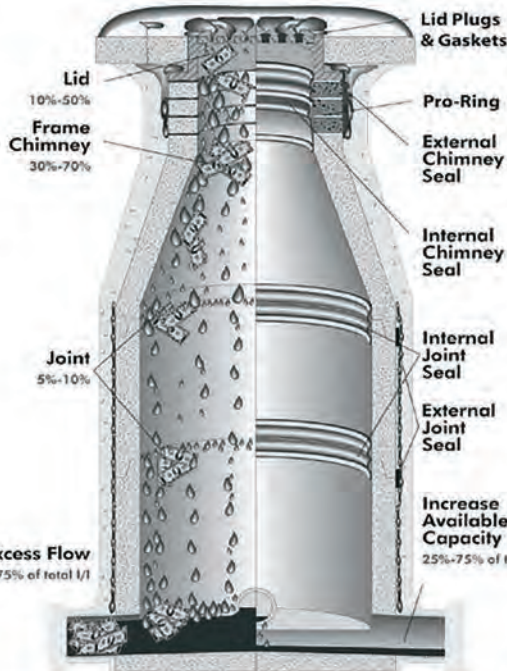
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A Message from the Manitoba Public Works Association

Well, 2019 has been flying by and I'm sure I can speak for lots of us when I say, where did it go? So far this year we have been able to pack in a bunch of fun events. We kicked off our year with a CPWA Manitoba Golf Tournament. We pulled off the event with an almost full roster and beautiful weather! Bridges Golf Course north west of Winnipeg hosted us again and treated us well.

With a beautiful course and great food, this event is always a good turn out for us.

We also managed to raise more money to put into our scholarship funds. This is a big incentive for our chapter, and we try to put as much of our fundraising efforts into that cause. It is important for us to give back and allow people who are working through school to be able to focus on their studies and not on having to feel the pressure of student debt.

National Public Works Week has come and gone again, and I was able to attend the City of Selkirk's Open House on May 23, 2019, at their Public Works Yard. They had lots of public works and fire department equipment on display and lots of interactive stations for the kids to play and learn. It was nice to also see the local Weed District with a table talking about everyday weeds and others that are invasive species.

We were hoping to have an event here in the RM of Montcalm as well, however with the timing of the flood waters this year staff were preoccupied. We will still be holding an event in the fall to allow

our residents the time to come and see the new shop and see what projects are in store for the following seasons.

Last month we hosted our Spring Fling Event and brought out some members to watch a baseball game at Shaw Park. Here we were treated to a great meal at Clay Oven and we watched the Winnipeg Goldeyes destroy the Chicago Dogs 15-1. Thank you to the City of Winkler for filling up a whole table. It's always nice to see members enjoying an evening out.

We are currently working together to sell tickets for our Gift Card Raffle. We will be drawing for the great prizes on July 15, 2019 and will keep our eyes open to get ready for the Grey Cup Raffle after we get back from our summer break.

After the break we are also working on a couple Lunch and Learn Events to bring members together to learn about different aspects of public works. From autonomous snow clearing vehicles to marijuana in the workplace, we are hoping to hit home with some of the current trends and topics that are on the edge of public works today.

Finally, I would like to take the time to thank my board for putting in the time and effort needed to get these great events and draws together. Even with our own careers pushing and pulling us we still find the drive to get together and organize these great networking events. Without them and the time that they commit none of these projects would ever leave the table.

Chad Buhlin

President
CPWA Manitoba Chapter

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As fall takes hold, I'd like to reflect on the summer construction season – one of many challenges for municipalities in terms of weather.

To the North, hot temperatures caused fires and evacuations early in the construction season, which as we all know also impacts municipal operations. The remainder of the province received more than their fair share of rain days, slowing the progress on many road and bridge construction projects I am certain. Hopefully the fall will bring with it some weather conducive to completing scheduled programs.

AMSA's fall includes a Strategic Planning session with our 15 executive members, to provide a framework for continued progress of our association. Over the last decade, AMSA's executive have followed in the footsteps of their predecessors to enhance and grow our group of public works leaders. I look forward to our discussion and some fresh ideas to continue our evolution for future sustainability of the organization.

AMSA will also be hosting another professional development opportunity

for members this fall called *Procurement Essentials for Municipal Managers and Debriefing Obligations Under the Trade Agreements* on November 12, 2019, in Edmonton. Register for this training on AMSA's website at www.amsapw.ca.

As always, fall convention takes place in Edmonton, November 13-15, 2019, one week earlier than is typical. AMSA convention attendees review new legislation and technologies and examine management strategies beneficial to both seasoned public works professionals and newcomers to the field. Highlights from the fall convention include Todd Hirsch, from ATB Financial, returning to provide an economic update to the group, keynote speaker Nelson Scott will delve into hiring strategies, and members will have the opportunity to tour the Weldco-Beales Manufacturing facility on day two. I hope you are able to join us for another great fall convention!

Joe Duplessie

AMSA President
General Manager of Infrastructure and Planning
Lac St. Anne County

AMSA's mission is to unite our 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 operations. Our association 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.

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Public Works Hiring Process:

Removing the “Fear Factor” of Hiring the Right People for the Right Job

By Scott Lamont, District of Squamish

It has always been a challenge every year to hire quality, dedicated staff for entry level labour positions. From interests from the street to inter department employees, how do we ensure that we hire the best possible employee to serve the public works sector in an honest, fair and transparent method?

First, we need to analyze the challenges. We first post internally, though sometimes this may cause issues such as inside staff wanting to “take a break.” What they do not realize is all the intensive labour, training, and physical strain that a labourer endures throughout the season.

Often enough we see applicants come in with no or very limited labour experience which causes low efficiencies, internal job distribution, and potential workplace injuries.

We then post externally, where it is essential to pay further attention to your Job Descriptions. Do they need to be updated? Are you looking for a general labour that can be cross trained in different departments? What kind of labour experience is necessary?

Or are you looking for direct labour experience: professional landscaping companies, road and utility construction, previous public work experience? If you lean to the prior, you may have the similar fate as with internal applicants. You need to be clear on the expectations of the posting.

- We begin with arriving to the job interview:
- Did they arrive in time?
 - Did they park in the directed area?
 - Did they bring the requested certification and documents?

If they missed any of these steps it gives you a good idea of what their ability is to follow oral and written instructions and procedures.

In the interview you should be looking at key measurements creating questions regarding:

- Do they have the required training, education, and experience?
 - » Grade 12 or equivalent;
 - » Possession of a valid class 5 BC Driver’s License;
 - » Certified Traffic Control Person;
 - » WHMIS; and
 - » Two years’ experience in labouring work.
- Do they have the knowledge, skills, and abilities?
 - » Basic knowledge of public works;
 - » What is it that public works does? How is public works funded?
 - » Safety awareness; and
 - » Work ethics.
- Utilize Behavioral Based questions to analyze their values, morals, ethics and behaviors to see if they match your District Core values.

As you weigh the answers, you can measure the responses creating a fair and transparent matrix. This will help transition the applicant

(if successful) to the next phase and ultimately to the final hiring process.

Next is the physical / mental testing, which is how you analyze applicants in a public works work zone. In each test, we are looking at:

- Safety;
- Ability to follow direction;
- Willingness to learn;
- Physical stamina; and
- Attitude.

Please consider having a first aid attendant onsite in case of emergencies and to correct form to prevent injury.

SANDBAG TEST

History and job-related task

1. Explain why operations would have to fill sandbags.
2. Explain the history and events where operations had to fill sandbags.
3. Explain how this test also goes over other areas in the operational workplace (i.e., picking up and dumping lime and fertilizer, placing grass seed into the hopper, and building dam sac walls).

Orientation

1. Detail directions on how the test is completed:
 - They will have 80 minutes to do six rotations of filling, hauling, placing and dumping 10 sandbags.

- Each rotation will consist of the following:
 - » Fill 10 sandbags with four shovel scoops of sand;
 - » Carry them five metres and place them onto a wooden pallet;
 - » Proceed to carry the 10 sandbags another five metres to an orange spray painted line; and
 - » Proceed back to the center sand pile to dump the sand and begin the rotation again.
- 2. Explain that if their bags are not full to the required level (four scoops), or if they dump sand, they will have to begin again.
- 3. Explain if they do not follow the directions their bags will not be counted until they begin again at the point they did not follow directions.

Safety

1. Explain that this is not a race. They are expected to finish the task, but we do not want to see anyone hurt.
2. Explain that they are expected to lift and carry with proper lifting technique.

3. Be aware of their other co-workers when shoveling.
4. If there are any signs that they may endanger themselves, ask them to stop. This includes, but are not limited to, feeling faint, dizzy, breathing problems and/or any symptoms that the first aid attendant may deem unsafe.

Conclusion

1. Explain the importance of this test.
2. Have fun and good luck.

WEED EAT TEST

Orientation

To operate a gas powered weed eater for two full tanks. They will be directed to the area that they will weed eat. They will be monitored for the following:

- Level of operating efficiency;
- Safety;
- Directions; and
- Attitude.

Safety

- Safe work procedure reviewed;

- PPE provided and instructed use; and
- Operational tail gate:
 - » Location;
 - » Public and co-worker safety; and
 - » Communication between applicants and leads.

WASTEWATER COLLECTIONS TEST

This test covers the wastewater collections daily routine. It covers machinery to manhole inspections. It is critical that applicants can follow step by step instructions to ensure proper operation and safety. We are grading physical attributes and listening skills.

Simulation Sewer Blockage

Safety:

- PPE provided and instructed use.
- Safe work procedure reviewed.
- Operational tail gate:
 - » Location;
 - » Public and co-worker safety;
 - » Communication between applicants and leads.

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Operations:

- Monitor pressure levels;
- Pulling hose back away from feet when blockage is released to ensure you are out of spillage area and tripping area;
- Have clean up material onsite in case of spillage;
- Pulling hose out, still high pressure, putting away properly; and
- Disinfect area.

Wastewater Treatment Plant rags

Process:

- Prepare the area where rags will be picked from;
- Tape off unsafe areas, as well as no entry points; and
- Have safety supplies available.

Materials:

- Two buckets; and
- Collection of “rags” in a confined area.

Safety and location:

- Explain the hazards of area grit and old side aeration;
- Show where garbage bins are; and
- Safety in the grit room.

Instructions test for listening:

- Fill (right) bucket to line;
- Take bucket, empty in the far bin in the grit room; and
- Personal safety equipment and use.

Observations:

- » Correct bucket;
- » Near to line;
- » Correct garbage;
- » Safety gear worn; and
- » Appropriate disposal of disposables.

Mechanical aptitude

Process:

- Give out the “test;”
- Set up across from lab; and
- Questions are basic.

Materials:

- Have pens available; and
- Question sheets.

Observations:

- Handwriting;
- Correctness;
- Body language; and
- Clean up of their stuff.

Bolts

Process:

- Fill one tray with thickened waste activated sludge (TWAS) and place nuts/bolts in the tray;
- Have another clean tray next to it. Have all the supplies necessary accessible;
- One person at a time. Have others out of view.

Material:

- Two bins; and
- TWAS and a little poly.

Safety and location:

- Explain the hazards of area solids room;
- Show where garbage bins are;
- Safety in the solids room; and
- Instructions test for listening:
 - » Remove bolts/nuts from the TWAS filled bin;
 - » Clean and place in the “clean” bin; and
 - » Personal safety equipment and use.

Observations:

- Safety gear worn;
- Comfort level with the TWAS;
- Understanding the written instruction; and
- Appropriate disposal of disposables.

TWAS tent

Material:

- Hose from grit room; and
- H2S tester.

Safety and location:

- Explain the hazards of area, i.e. H2S (prior);
- Safety regarding the TWAS tent; and
- Personal safety equipment.

Instructions test for listening:

- Test area for H2S;
- Hose out the correct area; and
- Personal safety equipment.

Observations:

- Stays out of the tent;
- Comfort level;
- Proper safety gear worn;
- Is it kept close to fresh air; and
- Appropriate disposal of disposables.

All tests will be marked the same way as the interview questions, in which you can utilize in the matrix.

Now it is time for the review matrix. One of the biggest benefits is utilizing your staff in assisting with the testing. They can give essential insight on the applicant’s work ethic, attitude, and abilities. Engaging your employees in this process improves team moral and employee engagement.

By utilizing this method, it gives both the applicant and the employer a better understanding of what it takes to be a public works employee, so we have the right people on the job. ▶

Scott Lamont is the Operations Supervisor for the District of Squamish.

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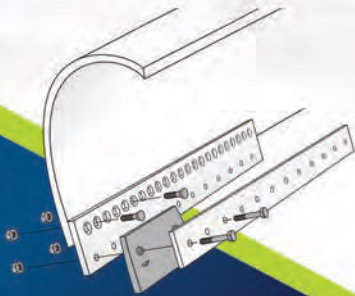
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Alberta's New Labour Laws: An Overview of Changes Impacting the Construction Industry

By Dan Bokenfohr,
McLennan Ross

On July 3rd, Bill 2 (*An Act to Make Alberta Open for Business*) passed its third reading in the Alberta legislature. When it receives Royal Assent and officially becomes law, Bill 2 will bring about important changes to the *Alberta Employment Standards Code* and *Labour Relations Code*.

In large part, the current UCP Government tabled Bill 2 for the purpose of undoing certain changes that had been introduced by the previous NDP government in 2017. In particular, the Alberta construction industry should take note of the following changes that will be implemented through Bill 2.

Employment Standards Code

Alberta employers will once again be permitted to enter into overtime agreements with their employees to allow for overtime hours to be banked and then taken off at a later date on an hour-for-hour basis. This is a significant change from the overtime rules that had been in place since 2018, which required employers to provide 1.5 hours off for each hour of overtime banked. This is a particularly positive change for construction employers, where overtime banking has long been a popular means of addressing the seasonal and weather-dependent nature of the industry.

The requirements for overtime agreements will otherwise remain unchanged. Overtime may still be banked for up to six months (or longer if under a collective agreement) before it must be taken or paid. If banked overtime is not taken off, it must still be paid out at 1.5 times an employee's normal hourly rate of pay. As a transitional provision, any overtime banked but not taken off and paid before September 1, 2019, must be provided at 1.5 hours off for each hour of overtime worked.

Alberta's minimum wage (currently \$15 per hour) will continue to apply



generally, but a special minimum wage (\$13 per hour) has been created for students under the age of 18. This "job creation student wage" came into effect on June 26, 2019 and applies to most students under the age of 18 (i.e. those attending high school, post-secondary or vocational institutions). It applies to the first 28 hours per week worked by such students while school is in session and to all their hours of work when school is on break (e.g. summer).

Effective September 1, 2019, general holiday pay in Alberta will revert to the model in place prior to 2018. Employees who have not worked at least 30 workdays for their employer in the 12 months preceding a holiday will not be eligible for holiday pay. Also, employees' entitlement to holiday pay will once again depend on whether the holiday falls on a regular workday. When an employee works an irregular schedule for which it is uncertain whether the holiday falls on a normal workday for that employee, the employee will be entitled to holiday pay

if the employee worked on the same day of the week as the holiday in at least five of the nine weeks preceding the holiday. Thus, moving forward, the pay owed to employees for holidays will be calculated as follows:

- When eligible employees are given off a holiday that is a normal workday, they are entitled to their average daily wage (5 per cent of their wages, vacation pay, and general holiday pay earned in the four weeks immediately preceding a general holiday).
- When eligible employees work a holiday that is a normal workday, they are entitled to either: a) their average daily wage plus 1.5 times their wage rate for each hour of work; or b) their wage rate for each hour of work on that day plus one day's holiday (paid at their average daily wage), given no later than their next annual vacation.
- When eligible employees work a holiday that is not a normal workday, they are entitled to 1.5 times their wage rate for each hour of work.

- When ineligible employees work a holiday that is not a normal workday, they are entitled to their regular wage, subject to the ordinary rules governing overtime.
- When employees are not required to work on a holiday that is not a normal workday, they are entitled to no holiday pay.

Labour Relations Code

Secret ballot voting has been reinstated as a mandatory requirement for unions

to obtain bargaining rights through certification applications before the Alberta Labour Relations Board. Unions will no longer be able to obtain automatic “card-based” bargaining certificates by simply presenting the board with evidence that more than 65 per cent of the employees in the proposed bargaining unit are members in good standing of the union or have applied for union membership in the last six months.

Such card-based applications were particularly problematic in the construction industry, where it is common for individuals to be members of multiple unions for the purpose of maximizing their job opportunities. Union membership is not necessarily an accurate indicator of employee support for the union becoming their exclusive bargaining agent with respect to an employer.

This risk of unions obtaining bargaining rights based upon equivocal evidence of employee support has now been eliminated, as votes will be mandatory in every case (in the absence of unfair labour practices by the employer) and majority support will still be required to carry any vote. The time allowed for unions to sign up new members for certification applications has also been reduced to 90 days from six months. These rules will apply to all certification applications filed after May 27, 2019.

The Alberta minister of labour will also be establishing a program to provide support and assistance to individual employees with respect to matters under the *Labour Relations Code*. The provision allowing for this comes into force on October 1, 2019, and the details of the program have yet to be determined. However, the purpose of the program will be to help employees better understand and exercise their rights in respect to both employers and unions.

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Future legislative changes

In its speech from the throne this spring, the Alberta government indicated that it intends to make further labour and employment law changes. It also signaled that one such change will be revisiting the broad power the board has had since 2017 to order certification without an employee vote in cases of employer unfair labour practices. While it is likely that this broad remedial power will be curtailed or removed altogether from the *Labour Relations Code*, Albertans will have to wait until this fall to see exactly what additional labour law changes will come to fruition.

Dan Bokenfohr is a litigator and advisor to union and non-union employers on labour, employment, workers' compensation, occupational health and safety and administrative law issues.



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Upcoming Events

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Red Deer, Alberta
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2019 PWX – Public Works Expo
Seattle, Washington
September 8-11, 2019

2019 PWABC-BCMSA Joint Conference and Tradeshow
Penticton, British Columbia
September 15-18, 2019

Saskatchewan Chapter: Fall Workshop
APWA Winter Maintenance Certificate Program
Saskatoon, Saskatchewan
September 19, 2019

APWA, Alberta Chapter 2019 Excellence in Public Works Conference & Tradeshow
Red Deer, Alberta
October 7-9, 2019

Public Works Supervisor Level 1 Course
Lethbridge, Alberta
October 15-18, 2019

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AMSA Fall 2019 Convention
Edmonton, Alberta
November 13-15, 2019

Public Works Supervisor Level 2 Course
Lethbridge, Alberta
November 25-28, 2019

Public Works Supervisor Level 1 Course
Northern Alberta, Location TBA
December 3-6, 2019

Public Works Administrative Professional-Core Skills and PW Overview
Calgary, Alberta
December 16-17, 2019

Public Works Supervisor Level 2 Course
Northern Alberta, Location TBA
January 7-10, 2020

Public Works Administrative Professionals Workshop
Canmore, Alberta
February 5-6, 2020

SPWA 61st Annual Conference and PWville
Regina, SK
February 25-27, 2020

Saskatchewan Public Works Association NPWW Workshop

This year's workshop was held in Regina, SK, on May 19-25, 2019. The theme this year was "It Starts Here," which represents the many facets of modern civilization that grow out of the efforts put forth by the public works professionals across North America.



WCB Sask presentation on injury rates and fatalities.



ATAP Session on incident investigation and corrective action.

SPWA/APWA Winter Maintenance Certificate



APWA Winter Maintenance Supervisor (WMS) Certificate

8:00 AM - 4:00 PM \$250-Members \$300-Non Members

Price includes breakfast, coffee, lunch and materials

This course provides a well-rounded overview of all aspects of snow and ice control for individuals charged with supervising their winter maintenance operations. The goals are for participants to:

- Expand their knowledge of planning and preparation
- Increase their understanding of winter weather and how it affects operations
- Identify how to better use traditional and alternative chemicals
- Consider what equipment is available and how to maintain it
- Expand understanding of snow & ice control techniques
- Appreciate the environmental impacts of winter maintenance policies

Who should attend?

- Supervisors with winter maintenance responsibilities
- Operators who aspire to be supervisors
- Operators who want a greater understanding of winter maintenance processes



APWA Winter Maintenance Operator Certificate

9:00 AM - 2:00 PM \$200-Members \$250-Non Members

Price includes morning coffee, lunch and materials

- Preparations based on weather forecasts
- Salt and sand applications, rates of application and speeds
- Pre trips on plow equipment and loaders
- Best practices to remove snow regionally i.e. roundabouts, driveways, bike lane
- Public education, outreach and social media i.e. responsibility to clear sidewalk
- Liquid salt brine, application and precautions, pros and cons
- Salt management, storing and handling
- Snow plowing, preparation and equipment, precautions and hazards
- Risk assessments for plowing, salting, sanding and brine applications
- Use of RWIS (Road Weather Information Systems) in larger municipality
- Use of Traffic Camera, CCTV, SCADA, AVL, and communication devices
- Best practices for training new staff

Who should attend?

- All levels of winter maintenance field staff
- Public works professionals new to winter maintenance
- Public works professionals looking to hear new ideas/gain perspectives

APWA Alberta Western Canada Snow Conference

In June, the Western Canada Snow Conference was held at the Edmonton Expo Centre and the Sutton Place Hotel Edmonton. This year's show focused on the theme of #SnowfightersUnite and had been specifically designed for your crew of #snowfighters. The conference itself was tailor-made for the men and women who fearlessly brave our Canadian winter weather conditions.



Grader Winner of the Snow Plow Rodeo Awards

Jason Gamracy came out on top in the Grader competition.



Truck Plow Winner of the Snow Plow Rodeo Awards

Keith Bedford came out on top in the Truck Plot competition.



Earlier this spring AMSA members met in Edmonton for the AMSA Spring Convention. Don't miss out on the next event, which is coming up in November!



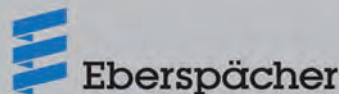
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Saskatchewan Public Works Association NPWW Proclamations

Thank you to all the Saskatchewan communities who recognized the many contributions of Public Works professionals who work in the public interest to build, manage and operate the essential infrastructure and services of our communities, and proclaimed May 19-25, 2019 as National Public Works Week! We appreciate your acknowledgement, advocacy, and education of our citizens and industry.

Below is the list of Saskatchewan communities that had 2019 NPWW proclamations signed, including the province. Every proclamation the SPWA received entered the municipality into a draw for one free registration to each of our quarterly events. The winning communities are highlighted along with the event they are entitled to attend on our behalf.

1. City of Humboldt, SK
2. City of Meadow Lake, SK
3. City of Melfort, SK
4. City of Melville, SK
5. City of Moose Jaw, SK
6. City of North Battleford, SK
7. City of Prince Albert, SK
8. City of Regina, SK
9. City of Saskatoon, SK
10. City of Swift Current, SK
11. **City of Warman, SK** - Fall Workshop 'APWA Winter Maintenance Certificate' - September 19, 2019 at the Saskatoon Inn
12. RM of Corman Park, SK
13. RM of Sherwood, SK
14. **Town of Battleford, SK** - 61st Annual SPWA Conference and PWville - February 25 - 27, 2020 at the Delta Regina
15. Town of Kindersley, SK
16. Town of Moosomin, SK
17. **Town of Oxbow, SK** - Equipment Rodeo & Golf Tournament - June 21, 2019 at Yara Centre/Hillcrest GC in Moose Jaw
18. Town of Shaunavon, SK
19. Town of Southey, SK
20. Village of Debden, SK
21. Village of Viscount, SK
22. Town of Rosetown, SK
23. **Town of Nipawin, SK** - NPWW Workshop - May 21, 2020 location TBA
24. Province of Saskatchewan

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The CPWA Board of Directors Annual Meeting in Ottawa

By Anne Jackson, American Public Works Association

CPWA Board of Directors Meeting

Each year, the CPWA Board of Directors meets in Ottawa, along with APWA / CPWA Executive Director Scott Grayson and APWA Director of Sustainability and Canadian Government Affairs Anne Jackson, to discuss policy and advocacy issues, and to build relationships with other stakeholder associations, government departments and Parliamentarians. This year's meeting was held on Monday April 29 and Tuesday April 30, 2019. Topics of discussion ranged from current events in Ottawa to the results of CPWA's recent Infrastructure Investment and Government Programs Survey.

The CPWA Board received an update about a project CPWA is partnering on with the Canadian Network of Asset Managers (CNAM) and several other national associations to develop an Asset Management Competency Framework for Canadian Communities. The framework will help municipalities formally capture the asset management (AM) skills, behaviors, and knowledge needed across their organization, and will enable them to measure, assess, and put training plans in place to help staff fill the gaps. The project is part of the Federation of Canadian Municipalities (FCM) Municipal Asset Management Program (MAMP), which is funded by the Government of Canada.

As part of its ongoing work to develop and refine CPWA's Public Policy Priorities and annual Pre-Budget submission to the House of Commons Standing Committee on Finance, the CPWA Board agreed to establish and monitor the following focus areas:

- Asset Management
- Climate, Resilience and Adaptation



The CPWA Board of Directors with Parliament in the background, left to right: Rylan Wadsworth, Quebec Chapter; CPWA President Steve Blayney, Manitoba Chapter; CPWA President-Elect Chris Hamel, Ontario Chapter; Anne Jackson, APWA Director of Sustainability and Canadian Government Affairs; Patty Podoborzny, Alberta Chapter; Scott Grayson, APWA/CPWA Executive Director; Scott Lamont, British Columbia Chapter; CPWA Past President Andrew Stevenson, Saskatchewan Chapter; Jennifer Norris, Newfoundland-Labrador Chapter; Mike Walker, Atlantic Provinces Chapter.

- Emergency Management / Preparedness
- Engineering and Technology
- Transportation
- Utilities and Public Rights-of-Way
- Water / Environmental Management

Outside of its business meeting, the CPWA Board of Directors held meetings with two partner associations, FCM and the Transportation Association of Canada (TAC); met with officials from two federal departments, Public Safety Canada (PS) and Indigenous Services Canada (ISC); and met with three Parliamentarians, the Honourable Bernadette Jordan, P.C., M.P. (South Shore-St. Margarets), Minister of Rural Economic Development, Marco Mendicino, M.P. (Eglinton-Lawrence), Parliamentary Secretary to the Minister of Infrastructure and Communities, and Sheri Benson, M.P. (Saskatoon West), NDP Deputy Leader.

Meeting with the Federation of Canadian Municipalities

FCM and CPWA have long been partners in advocating for infrastructure investment as an economic driver for the nation and several FCM staff – Matt Gemmel, Manager of Policy & Research; Megan Stanley, Government Relations Advisor; Sara Jane O'Neill, Policy Advisor; and Jean Lawson, Policy Officer – joined the CPWA Board for a discussion about shared priorities.

FCM shared that it is focused on a stronger direct federal-municipal relationship and that it welcomed the one-time transfer, announced in Budget 2019, of \$2.2 billion through the federal Gas Tax Fund to address short-term priorities in municipalities and First Nations, effectively doubling the Government's commitment to municipalities in 2018-19.

This increases the overall cost of the Investing in Canada Plan to approximately \$190 billion. Budget 2019 also included additional funding for two FCM programs: The Municipal Asset Management Program and The Green Municipal Fund.

FCM continues to focus on disaster mitigation, including Disaster Financial Assistance Arrangements (DFAA) eligibility criteria (which are different in every province), adaptation planning, risk assessments, and policies around natural infrastructure. FCM is advocating for the expansion of the Disaster Mitigation and Adaptation Fund (DMAF), which has a high threshold but is not limited to flooding and under which natural infrastructure is eligible.

Other areas of mutual interest are shared mobility, including the impact of automated vehicles on public transit and the establishment of a permanent Public Transit Infrastructure Fund, as well as municipal rights of way, particularly issues around control and compensation.

Meeting with the Transportation Association of Canada

The CPWA Board of Directors met with Sarah Wells, TAC Executive Director, and Geoff Noxon, TAC Director of Technical Programs, to discuss shared transportation priorities, particularly around Connected and Automated Vehicles (CAV) and the unique needs of small municipalities. TAC, which celebrated its centennial in 2014, focuses on road and highway infrastructure and urban transportation and many APWA members are also members of TAC.

In discussing the work of its CAV Task Force, TAC noted the distinction between connected and automated vehicles and that the task force's focus is currently on connected vehicles and the primary communications technologies to support them. It was noted that the Council of Ministers and Deputy Ministers responsible for Transportation and Highway Safety is studying CAV, and that Transport Canada is supporting initiatives to advance CAV technologies through research, testing, and development.

TAC also highlighted its Small Municipalities Task Force. Of TAC's 500 corporate members, 200 are municipalities

The framework will help municipalities formally capture the asset management (AM) skills, behaviors, and knowledge needed across their organization, and will enable them to measure, assess, and put training plans in place to help staff fill the gaps.

(TAC's other members are other levels of governments, private sector companies, academic institutions, and other associations). Of those, about 160 are small (though many large municipalities / regions have significant rural components) and their needs are unique, such as speed management.

Meetings with Public Safety Canada and Indigenous Services Canada

The CPWA Board of Directors met with David Hurl, Director of Policy and Parliamentary Affairs to the Minister of Public Safety, and Elizabeth Cheesbrough, Senior Policy Advisor at Public Safety Canada, to discuss the role of public works as first responders who are also responsible for critical infrastructure, and to advocate for public works being engaged with other parties in pre-planning exercises, during an emergency, and post-emergency. Several Public Safety Canada programs were discussed, including the National Disaster Mitigation Program (NDMP), and the CPWA Board emphasized that it can help promote Government programs.

CPWA Board members Patty Podoborzny and Andrew Stevenson met with Joseph Wabegijig, Policy Advisor to the Minister of Indigenous Services, to discuss opportunities for collaboration and how training programs developed for public works professionals can benefit First Nations. The discussion allowed CPWA to show that APWA's resources have broad applicability to anyone who builds, operates and maintains public infrastructure, and to emphasize that municipal public works departments, particularly those of small and rural communities share many of the same challenges that face First Nations.

Meetings with Members of Parliament

Andrew Stevenson, Rylan Wadsworth and Jennifer Norris met with Sheri Benson, M.P. (Saskatoon West), NDP Deputy Leader, to discuss CPWA's focus on emergency management and preparedness, disaster mitigation, and new transportation technologies such as autonomous vehicles.

Meetings like these with Members of Parliament provide the occasion to introduce elected officials to public works and to the APWA members from both the public and private sectors who plan and manage the roads and bridges, water and wastewater treatment facilities, traffic signals and lighting systems, parks and city buildings, snow removal, sanitation and public transit services representing the backbone of Canadian communities. It is also an opportunity to emphasize that public works professionals are an essential part of first responder teams when disasters strike.

The Honourable Bernadette Jordan, P.C., M.P. (South Shore-St. Margarets), was appointed to the newly created position of Minister of Rural Economic Development in January 2019 with the overarching goal to champion middle-class job creation, economic opportunity and quality of life in rural Canada. Her mandate includes leading the delivery of rural infrastructure and broadband programming, funding and commitments and she works closely with the Honourable François-Philippe Champagne, P.C., M.P. (Saint-Maurice-Champlain), Minister of Infrastructure and Communities.

CPWA Board members Steve Blayney, Chris Hamel, and Patty Podoborzny

met with Minister Jordan to discuss how CPWA can be a partner in advancing rural economic development and infrastructure investments, including increasing high-speed broadband coverage across Canada's rural communities. Budget 2019 includes a new, coordinated plan that would deliver \$5 billion to \$6 billion in investments in rural broadband over the next 10 years to help build a fully connected Canada

– including rural, remote and northern communities.

CPWA Board members Patty Podoborzny and Mike Walker met with Marco Mendicino, M.P. (Eglinton-Lawrence), Parliamentary Secretary to the Minister of Infrastructure and Communities, and Joseph Pickerill, Chief of Staff to the Minister of Infrastructure and Communities, to discuss infrastructure investment and the Investing in Canada

Plan, including the one-time transfer of additional funding to municipalities through the federal Gas Tax Fund included in Budget 2019. This meeting offered CPWA the opportunity to advocate for its 2019 Public Policy Priorities, particularly predictable, sustainable, and flexible funding streams that allow members to adequately plan for their infrastructure and public works needs.

As Canada prepares for the upcoming federal election on October 21, 2019, the CPWA Board of Directors used its time in Ottawa to continue its focus on the central public policy issues affecting the state of Canada's public infrastructure and to foster dialogue and enhance important relationships as the 'voice of public works in Canada.'

Anne Jackson is the Director of Sustainability and Canadian Government Affairs, in the American Public Works Association, Washington, D.C.

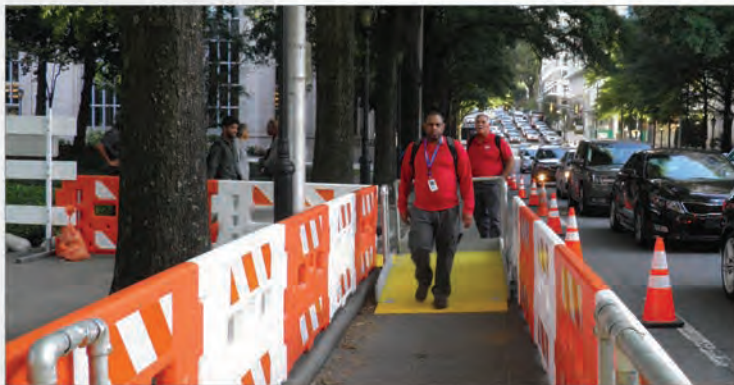
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South Regional Waterline—Project B: County of Northern Lights

By Glenn Newman, Wood

The County of Northern Lights (CNL), in Northwestern Alberta, near Manning, retained Wood’s environment and infrastructure solutions business (Wood) for the design and construction supervision of the proposed South Regional Water Line—Project B, to provide potable water to the southern portion of the County. This will enable the County to meet its goal to ensure that greater than 90 per cent of residents within the County have reasonable access to a source of potable water, with over 75 per cent of residents being serviced directly through a water distribution system by the year 2021.

When the project is complete approximately 64.6 km of waterline will be installed between the Town of Peace River and the Hamlet of Dixonville. Two new water truck fill stations will be available to residents near Weberville and Warrensville. The Dixonville Water Treatment Plant will become a distribution centre and the foundation will be in place for residents to opt-in to getting running water plumbed directly to their homes.

The entire project will cost an estimated \$35 million, with CNL footing 25 per cent of the bill. The County’s long-term plan is to expand their rural distribution system. Once the County receives the provincial grants needed, expansion will begin where there is the greatest demand. Tying into the systems will be optional.

This project was challenging as a wide array of environmental issues required a specific approach to constructing the project in order to meet the project schedule and adhere to the requirements of Provincial Regulations. The regulations that applied to this project and were used in preparing the Public Consultation and Routing, Conservation and Reclamation and Environmental Protection Plans required to obtain Environmental Approvals for the project included: *the Environmental Protection and*



Pipeline installation (using HDD or open cut techniques) during the winter is required to take advantage of the lowest seasonal ground water levels within this aquifer.



As HDD was determined to be feasible, the drill path was designed to meet the requirements of the Highway and water body crossings and appropriate drill entry and exit locations were selected.

Enhancement Act, the Water Act, the Historical Resources Act, and the Soil Conservation Act.

These issues included consideration of working in and around wetlands, watercourses, wildlife, and sensitive soils. Another unique consideration includes review for the presence of historical resources. The potential for paleontological resources is being reviewed and consultation with the Tyrell Museum is considered to determine the best monitoring or procedures and avoidance techniques. Both archaeologists and paleontologists have been present onsite to monitor construction techniques and provide constructive feedback on Contractor’s mitigation measures.

Fall, winter, and early spring inspection of the project works were therefore completed by Wood environmental inspectors to determine compliance to various environmental protection measures. Protection measures to be considered include erosion and sediment control, water quality monitoring, and handling of variable or sensitive soils (wetland, high gravel contents, peatlands and saline soils).

Contractors are being frequently challenged on their abilities to work with extreme environmental conditions including extreme cold snaps (-40 Celsius), thick snow cover, and are currently facing rapid spring melt and potential risk of regional flooding. Specialized staff are on

site to closely monitor soil salvage and replacement techniques of wetland soils and sensitive soils within the Grimshaw Aquifer during horizontal directional drilling (HDD) installation, or areas where open cut is the only option of pipeline installation.

HDD installation is extremely difficult to install within the Grimshaw aquifer due to the presence of large cobbles and high gravel contents. This often affects the length of the HDD drives and location of HDD entry and exit pits. Furthermore, pipeline installation (using HDD or open cut techniques) during winter is required to take advantage of the lowest seasonal ground water levels within this aquifer, targeting installation in this zone to be completed by February.

As a result, Alberta Environment and Parks have been updated regularly on revised designs, and mitigation methods in order to avoid impacts on the Grimshaw Aquifer, local watercourses, and wetlands. This close working relationship has enabled the project to proceed throughout the

winter, frequent consultation with AEP has resulted in a good working relationship with the Regulator.

Consideration of landowners cropping practices was also included in the overall design and mitigation measures, including compelling the Contractor to comply with the County's bio-sanitation protocol for cleaning of equipment to avoid the spread of agricultural pests including Clubroot. Furthermore, the timing of pipeline installation has been a major consideration in order to avoid soil degradation and replacement of topsoil prior to spring seeding. Rig mats are being used to avoid soil rutting and compaction during winter / spring conditions, while further avoiding agriculture lands in the spring to allow for timely spring seeding.

Close monitoring of hydro fracture (frac-out) due to HDD installation near landowner properties is also being conducted. Vacuum trucks are continuously on stand-by ready to remove any frac-out materials as soon as they become visible. These materials are disposed of in a dedicated sump pit,

which is protected from wildlife entry by installation of protective fencing.

Working close to the roadways with the presence of open excavation pits also requires concrete barriers for the safety of the public transportation, especially in the event of night driving or off road (snowmobile / ATV) traffic. All these components require continuous monitoring, using various environmental specialists, and engineers as supplied by Wood.

The design included heavy reliance on engineered solutions to mitigate impacts to wetlands and sensitive environmental areas. 142 wetlands and ephemeral waterbodies were identified in the Local Study Area (LSA) which formed part of an extensive Conservation and Reclamation Plan prepared by Wood which need to be avoided. The use of innovative trenchless technologies allowed for this project to have minimal impacts on existing infrastructure, private property, and the environment.

Horizontal directional drilling (HDD) is a trenchless construction method utilizing

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equipment and techniques from horizontal oil well drilling technology and conventional road boring. HDD construction is used to install petroleum pipelines (steel or plastic), fibre optic and electric cables, and water and wastewater pipelines where conventional open trench construction is not feasible or will cause adverse disturbances to environmental features, land use, or physical obstacles.

The South Regional Water Line will see 56 km of the total 64.6 km of waterline installed using this technology. Due to the soil conditions (cobbles and gravel) in the environmentally sensitive Grimshaw Aquifer, 8.6 km of the waterline was installed using traditional open cut methods.

The most significant challenge on the South Regional Water Line Project was to limit impacts over large wetlands which required HDD drives up to 900 metres in length and up to 16 metres in depth. Typically, regional water lines projects in Alberta consist of open cut 3 to 4 metres in depth or HDD drives less than 400 metres in length and 3.5 to 5 metres in depth. This required pre-qualifying Contractors to ensure they had the capability to complete the longer

deeper HDD drives needed to meet the objectives of this project.

Wood mitigated the risk of Hydro Fracture during the HDD operations through detailed HDD design which was based on extensive geotechnical investigations. During the design for the South Regional Waterline, Wood drilled and investigated 97 individual boreholes, Muskeg Probing was completed to confirm the depth of muskegs and Electrical Resistivity Testing (ERT) Geophysical testing was completed to confirm soil stratigraphy in challenging soil conditions.

As HDD was determined to be feasible, the drill path was designed to meet the requirements of the Highway and water body crossings and appropriate drill entry and exit locations were selected.

The entry and exit pit locations (and the length of the HDD drives) were determined based on operational requirements in narrow (20 metre wide) road allowances, the requirement for the protection of private property (fences, shelter belts, etc.), environmental setback requirements for wetlands and water

courses along the chosen route as well as limits to the HDD drilling process due to existing soil conditions.

Going forward Municipalities in Alberta will need to continue to consider Trenchless Technologies for regional waterline installation projects in order to meet the challenges new Environmental Regulations have placed on these types of projects.

In order to successfully implement this technology Alberta Municipalities and Contractors involved with waterline construction will need to work closely together to ensure that the available technologies to achieve longer drives – in order to significantly reduce the ground surface impacts associated with closely spaced entry and exit pits – with the regulatory requirements to minimize adverse environmental and social impacts, are fully understood so they can be implemented successfully. ▶

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Morinville's New Crown Jewel

LEFT: The NHL sized ice surface has spectator seating for 437, and, with expandable seating options, can accommodate up to 1,200.

RIGHT: The new Morinville Leisure Centre is a beautiful addition to the community and will act as a major hub.

The Town of Morinville's new crown jewel, the Morinville Leisure Centre (MLC), opened its doors to the public in May 2019. Construction of the \$30.5M facility began in December of 2017. With the project being built on time, and on budget, the community has embraced the facility and usage rates are growing steadily every week.

In contract with Stantec and Clark Builders, the largest capital project in Morinville's history was built under the watchful eye of Town of Morinville Engineering & Facilities Manager, Jim Gourlay, who oversaw management of the project from the Town's perspective. We are currently finalizing the plan for trails and development of various elements of the 77-acre site, including a toboggan hill and additional sports fields and recreation facilities.

The facility announced its first major sponsor, Pembina Pipeline Corporation (Pembina), with a five-year partnership agreement totaling \$250,000 in May. Additional sponsorships have been secured and will be announced as agreements are finalized. The official grand opening is set for September 7, 2019.

The MLC is a source of great community pride. The project Site Supervisor,

Brad Reiter from Clark Builders, is also a Morinville resident. After spending the better part of two years on the project, Brad received membership number one as a gift from the town for his dedication to the project, and he was recently awarded the Pride of Morinville by the Morinville Town Council.

The MLC is a multi-purpose recreation facility that currently houses an NHL sized arena, a field house, indoor track, fitness centre, children's play space, meeting room, lobby and spectator areas, and concession.

MLC Amenities: **Arena**

The NHL sized ice surface has spectator seating for 437, and, with expandable seating options, can accommodate up to 1,200. There are four dressing rooms, a referee room, and two premier dressing rooms adjacent to the ice. The arena can be booked all year for either ice or dry floor activities.

Field House

The field house has a boarded surface with sport flooring that can be divided into three courts. Each court is the size of a basketball court. The courts can be used individually by using the separator curtains or

combined to provide a large playing surface. The courts are designed for spontaneous use, drop-in programs, and registered programs. The field house can accommodate a variety of sports including volleyball, basketball, badminton, pickleball, and floor hockey. There are also four dressing rooms and a referee room.

Track

The track is located on the main floor and surrounds the field house. The 200 m, three-lane track can be used for walking and running and will accommodate strollers and wheelchairs.

Fitness Centre

The fitness centre is located on the upper floor. It has a variety of equipment from cable machines to cardio equipment. There are lockers and a changing bench located outside the fitness centre entrance.

Children's Play Space, presented by Atlas Premium Homes

The children's play space is located on the main floor. It has a variety of small, portable play features. This area is recommended for children under eight years and will hold up to 25 people.

Pembina Atrium

The Pembina Atrium welcomes you to the MLC. Whether you are waiting for a friend to work out, or simply stopping in to pick up the kids from a practice, you can enjoy a small nook or tables and chairs near the concession.

Concession

The concession is located on the main floor in the lobby and offers a variety of

healthy food and beverage choices for both the arena spectators and field house users.

Meeting Room

The multi-purpose meeting room is located on the main floor. It is equipped with folding tables and chairs and holds up to 15 people. It's available for bookings for meetings, birthday parties, and other small group activities.

Barry Turner, Mayor of Morinville, is proud of this new Centre. "I want to extend

a thank you to the residents of Morinville, who ultimately everyone on this project works for. You have been the real leaders on this project. This building will become a major hub of our community having something for everyone. This is no accident. We listened to what our residents expected and delivered what we could ultimately afford."

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At What Cost? Is Getting There Faster Worth Someone's Life?

By Karen Grant, City of Saskatoon

The City of Saskatoon is taking a bold approach to its work zone safety campaign after hearing from disheartened staff that drivers just aren't slowing down.

Why do people ignore work zones?

In a survey of road workers last year, the top three reasons drivers ignore work zone signs is because they don't believe they will get caught (38 per cent), don't know the risks (15 per cent), or they are in a hurry (14 per cent).

Getting better slowly, but surely

In 2018, City workers reported feeling like driver behavior improved (32 per cent noticed a change at the end of the season). Police also issued 75 per cent fewer fines for speeding past works zones than in 2017, with the same or more work zone patrolling.

Staff reported ten incidents of vehicles entering their work zone illegally to police for investigation, compared to zero reports in 2017. Of the ten, police issued fines to three and warning letters to the others.

Actions speak loudly

An important piece of this initiative involved building trust with the staff so people felt that their reported incidents would be given serious attention by management and police. To do that, we did some myth-busting and streamlined our reporting process with the Saskatoon Police Service.

Police increased patrol at work zones on local streets, where the workers have some of the biggest issues with vehicles entering their workspace. Seeing more police presence and having them issue fines in response to their reports went a long way in building trust for the road workers.

Unfortunately, there were two instances where equipment was damaged by vehicles entering work zones that summer, with one narrowly missing a worker. Aside from reporting these incidents to police, we involve local media

to highlight the risk workers are facing in the work zone. Staff recognized that their management teams were genuinely concerned and saw public support for their well-being.

190 reasons to slow down in a work zone

New signs were introduced in short-term work zones to slow drivers to 30 km/h. The fine for going '50 in a 30 zone' is \$190.

It was clear early in the engagement process that staff have the most issues with drivers when they are in short-term work zones. These set-ups have the least barriers and are often between two directions of traffic. They also don't provide much direction beyond a "squeeze right" or yield sign.

Some feedback received from drivers during the awareness campaign was related to the recommended speed to slow to when passing work zones. The new signs and temporary speed limit are enforceable under the Traffic Bylaw and police are enforcing them. An advertising and public relations campaign are part of the launch and we hope road workers will notice an improvement in driver compliance.

Road to successful safety communications

It was critical to involve the staff, who are directly impacted by traffic in their work zones, right from the start during the planning stage, to understand the real issues.

The City of Saskatoon's 2018 Respect Work Zones campaign was recognized for communications excellence with a Gold Quill Award by the International Association of Business Communicators at its World Conference in 2019.

Watch the testimonial videos and learn more at saskatoon.ca/respectworkzones/.

Karen Grant is a Communications Consultant for the City of Saskatoon. Karen provides strategic internal and external communication solutions for transportation and utility projects.



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Community Comes Together to Restore White Rock after Devastating Storm

By Kaitlin Vitt, *The ROADRUNNER* staff writer



The crew worked quickly and safely to clear up the city and reopen it up to the public.



Crews went to work right away, clearing streets of hazards to make the areas safe for the public again.

On December 20, 2018, winds reaching 100 kilometres per hour ripped through the City of White Rock, British Columbia, in what residents say was the most powerful storm the area has seen. More than 400 millimetres of rain fell, and trees crushed cars, landed on power lines, blocked roadways, and scattered the beach with a massive number of logs.

“You couldn’t even see the beach,” says Dustin Abt, Manager of White Rock’s Public Works Department. “I didn’t even know Mother Nature could deposit that many logs.”

The beach is home to the city’s beloved pier, a popular spot for locals and tourists. Located on Semiahmoo Bay, this iconic structure, built in 1914, was destroyed during the storm in December, as was the nearby seawall, requiring the closure of the promenade on East Beach.

A report on the storm by BC Hydro says this storm was the most damaging in BC Hydro’s history. The storm resulted in more than 750,000 Hydro customers without

power. A report released in 2018 says the number of storm events BC Hydro has responded to had increased in the five years prior and that this December storm shows the trend is continuing – the frequency and severity of storms are increasing.

City crews got to work immediately. Abt went to the fire hall to work with the fire chief, co-ordinated efforts by making a list of areas they had to make safe for the public, then dispatched out workers. Crews and contractors put up barricades and caution tape, salvaged boats and removed trees. Once crews were out, Abt drove around the city, which is only five square kilometres, to check in to make sure things were going smoothly and safely.

“When it’s happening, it’s a flurry of activity. Just to watch everybody working safely, it made me proud,” Abt says. “We always want to work safe and always want to work smart, and they proved it.”

A railway line runs through White Rock, and as this line provided support in building the city, it provided support in cleaning it up. A railway engineer from BNSF

Railway offered Abt, the fire chief, and the city engineer, to use a road-rail vehicle to survey the damage, giving a new view of the destroyed pier, the log-covered beach, and the boats that were forced to the beach by strong waves and wind.

The public works department continued to work with BNSF. City crews, with assistance from an environmental monitor, cleaned up the foreshore with excavators. When major cleanup started, an excavator, sitting on top of railway cars, picked up logs and put them in railway cars for removal. Crews then transported the logs to a muster area using logging trucks. In total, one million pounds of logs were removed from the beach alone.

Multiple city departments pulled together for storm cleanup, and employees came in on their days off to pitch in. Once major cleanup was done and areas were safe for the public, people from the community came to assist cleanup at the beach. The city provided gloves and bags, plus the city’s solid waste fleet worked on the beach to remove massive amounts of small debris.

Tree debris from around the city was brought to Centennial Arena in White Rock. It was important to pick up even the smaller pieces of debris because, as Abt explained, they can still do major damage, especially if overland flooding occurred.

After the initial cleanup, city crews got to work on restoring the promenade and seawall. Again, it was a group effort. Abt says after consulting with Semiahmoo First Nation, the city worked with archeologists and environmental consultants to ensure the seawall was rebuilt in a way that respected the surrounding land.

Part of the promenade was reopened to the public in February, and it was reopened entirely in June. This includes new fencing, picnic tables, benches, an irrigation system, and a rebuilt sea wall, or rip rap, raised by one metre to be better prepared if a storm as destructive as December's hits the area again.

Each decision made in the cleanup and restoration was thoughtful and intentional. When rebuilding the rip rap, Abt investigated options to create a border edge between the rocks making up the wall and the adjacent grass. The final decision was to use old railway ties from BNSF, again demonstrating the importance of the rail line to the area, plus proving the importance of various companies coming together to rebuild White Rock.

Restoration is an ongoing effort, whether it's putting in another bench or two, or bolting down the lids on garbage cans. Abt stressed the importance of city departments, city council, organizations, contractors and the public coming together to make cleanup and restoration of White Rock possible. The historic White Rock pier is set to reopen in August. ▶

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Winnipeg's First Large Diameter Microtunnelling Project

2700 mm Trunk Sewer (Cockburn and Calrossie Sewer Relief Works Contract 4)

By Kelly Fordyce, EIT, KGS Group; Ray Offman, P.Eng., KGS Group; and Kas Zurek, P.Eng., City of Winnipeg Water and Waste Department

The Cockburn West and Southeast Jessie Sewer Districts are two of 43 combined sewer districts located within the City of Winnipeg. The sewer systems within these two districts do not meet the minimum level of services, which results in a high risk of annual basement flooding in the city. The city aimed to develop an engineering plan to correct the deficiencies and address the construction program.

In 2011, the City of Winnipeg commissioned KGS Group Consulting Engineers and their sub-consultants (Jacobs, Dillon Consulting, and AECOM) to assess the district wide level of service requirements and provide design and construction services to address the city's needs.

The total separation of the existing combined sewer system was selected to achieve the required level of service in the Cockburn West and Southeast Jessie districts and to facilitate future commercial and residential developments. This involved removing all storm water inputs from the existing combined sewer and connecting them to a newly constructed land drainage system (LDS). The resulting diameter of the truck sewer to handle to the conveyance of the storm water flows for the total separation scheme was 2700 mm.

Separate construction contracts were developed to address the varied needs of the project and Contract 4 included the following technical scope:

- Installation of 525 m of 2,700 mm Class V Reinforced Concrete Pipe (Truck Sewer), and;
 - Installation of 14 m of 1,350 mm Class 140-D (Class V) Reinforced Concrete Pipe (Cross Connection).
- Construction began in May 2017 and all



Launch of DECAST microtunnelling pipe.



Aerial photo of launch shaft.

major underground works were completed by November 2017.

Several complex challenges were presented as part of the design and construction of the 2,700 mm Trunk Sewer, including site conditions, physical constraints, and stakeholder needs (CN Rail, private land and business owners, and the public). Microtunnelling was selected as the tunneling technique to address them.

Project challenges

Workspace and stakeholder needs

A relatively large workspace was required for the bi-directional launch shaft (11 m inner diameter), as well as the associated equipment and material for daily tunnelling operations. The project site was limited to a 10 m wide permanent LDS easement and a 10 m wide temporary construction easement. These easements ran within 5 m of a major commercial building that required continued

truck access within this space. Through the use of microtunnelling, the soil separation plant could be located away from the bi-directional launch shaft.

Railway requirements and ground loss

Stringent settlement requirements were required by CN to ensure uninterrupted operation of their rail service for Drive 1. A threshold vertical settlement 8 mm was set for notifying CN, with a 15 mm settlement triggering a total project shutdown. Analysis for conventional open face tunnel methods indicated settlements in the order of 25 mm could be expected.

A tunnel design was selected that required the use of a closed face TBM capable of maintaining both face pressure and annulus overcut pressures. A sophisticated rail survey monitoring program was developed and implemented by the Contractor and Resident Engineering personnel during construction.

Winnipeg soils

Evaluation of the geotechnical conditions was paramount to the selection of the tunnelling method. The elevation of the tunnel was in the high plasticity, Lake Agassiz clay deposit; common throughout the city. The clay deposit is 70 to 80 per cent clay minerals and is characterized as having very high swelling and clogging potential based on analysis of the geotechnical indices and natural moisture content. As part of the evaluation, KGS Group developed the first Geotechnical Baseline Report (GBR) for the City of Winnipeg to assess the suitability of the various tunnelling techniques and to develop the baseline soil conditions. The GBR:

- » Provides a contractual description of geotechnical conditions assumed to be encountered during construction, and
- » Provides a mechanism that clearly establishes risk distribution if soil conditions encountered differ from the ranges specified.

Construction highlights

- State-of-the-art tunnelling technology was implemented for the 2700 mm Trunk Sewer construction:
 - » Microtunnelling using Pipe Jacking to advance the tunnel and a Microtunnel Boring Machine (MTBM) for soils excavation.
 - » Control of slurry pressures in the MTBM face and annulus to resist against settlement when tunnelling below the CN rail lines.
 - » Sequential slurry separation process to separate excavated soils from the slurry within a closed loop system eliminating the need for handling of excavated material within the tunnel.
- The wet cast reinforced concrete jacking pipe was manufactured by DECAST for the contractor. No quality issues with the pipes were identified throughout construction.
- The contractor's reinforced concrete caisson shaft design and self-sinking installation methodology produced negligible vibrations through the clay layer and was non-intrusive to the surrounding environment / neighbourhood.
- The project was successfully completed within the permissible settlement

tolerances defined by the project stakeholders and no railway-related delays or outages were experienced or produced during the tunnelling operations.

Other Past, Ongoing and Future Tunnelling Contracts

City of Winnipeg Construction of Trunk Sewer and LDS Separation – Cockburn and Calrossie Sewer Relief Works (Contract 11):

The Bid closed October 2018. The project includes installation of approximately 500 m of LDS piping ranging from 1,500 mm to 2,100 mm diameter, and approximately 1.4 km of new land drainage laterals, 300 mm to 750 mm diameter, installed via trenchless methods and to provide sewer separations. The project was awarded to Nelson River Construction from Winnipeg, Manitoba.

City of Winnipeg Harrow Street Combined Sewer Modifications – Cockburn and Calrossie Sewer Relief Works (Contract 5a):

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Modifications of existing infrastructure (pre-tunnelling works) to facilitate the upcoming Contract 5 tunnelling work. The project was awarded to J-Con Civil from Winnipeg, Manitoba and was completed June 2019.

City of Winnipeg Construction of Trunk Sewer and LDS Separation – Cockburn and Calrossie Sewer Relief Works (Contract 5):

The Bid closed March 2019. The project includes installation of 700 m of

LDS piping ranging from 2,100 mm to 2,400 mm diameter, installed via tunnelling methods. The project was awarded to Dibco Underground Ltd. from Bolton, Ontario.

City of Winnipeg Construction of the Grant Sewer and LDS Separation – Cockburn and Calrossie Sewer Relief (Contract 12):

The Bid closed May 2019. The project includes construction of 1000 m of LDS

piping ranging from 450 mm to 1,500 mm diameter by trenchless installation methods. Construction is anticipated to commence in the fall of 2019. ▶

Kelly Fordyce, EIT, and Ray Offman, P.Eng., are with the KGS Group in Winnipeg, Manitoba. Kas Zurek, P.Eng., is with the City of Winnipeg Water and Waste Department, in Winnipeg, Manitoba.

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The Benefits of Mobile LiDAR Methods

By Sandy Borthwick, T&T Braveheart LLC

While the concept of light imaging, detection, and ranging (LiDAR) has been around since the mid-1970s, the lack of reliable global positioning systems (GPS) and inertial measurement units (IMU) prevented the development of commercially viable mobile LiDAR systems. During the 1980s, the demand for accurate positioning and motion reference systems for wide-area photogrammetry and aerial topographic mapping accelerated the development of mobile LiDAR technology. This rapid market driven development continued throughout the 1990s and 2000s, and almost 40 years on, the modern mobile LiDAR systems can deliver as much as one million data points every second with accuracies of better than 0.02 to 0.03 meters.

In 2012, the Government of Manitoba purchased the IntelLAS™ mobile LiDAR system for use in Infrastructure and Transport projects. Since that time, many mobile mapping projects have been successfully completed in record time, yielding unprecedented survey data quality and exemplary safety records. The IntelLAS™ mobile mapping system (pictured right) delivers over 700,000 survey grade data points per second at ranges of up to 100 meters in a 360° by 42° field of view.

This paper discusses some of the many benefits of using mobile LiDAR systems over traditional survey methods in the Transportation Industry.

IMPROVED DATA

Mobile LiDAR offers engineers and surveyors a much more comprehensive data set than would ever be possible using conventional survey methods. A complete 3D model of the project area is created with survey accurate point measurements, offering the ability to locate features and make measurements to overhead utilities, bridges, roof tops and many more difficult to reach areas which are normally unapproachable by conventional survey methods.

ACCURACY

Using mobile LiDAR is much more accurate than other ground-based survey solutions. The positioning and motion reference technology used in modern mobile LiDAR systems today can measure position and attitude many hundreds of times a second to accuracies beyond those achievable by conventional survey methods, creating survey and engineering grade 3D models and engineering drawings of a project area in near real-time.

SAFETY

Mobile LiDAR systems can be operated day or night, enabling data collection during periods of reduced traffic flow and without having to stop traffic. The mobile LiDAR vehicle simply drives at normal highway speeds, causing no disruption at all to other road users. There is no need for the vehicle driver or the LiDAR system operator to leave the safety of the vehicle and step onto a busy road. The reduced risk to survey personnel is the number one benefit of using mobile LiDAR systems over traditional survey methods.

TIME SAVINGS

When using mobile LiDAR systems, measuring the time it will take to complete a specific survey activity changes from man-hours to miles-per-hour. Mobile LiDAR systems are so efficient that survey grade 3D data can be collected as fast as the LiDAR vehicle can travel. Even at speeds of up

Mobile LiDAR offers engineers and surveyors a much more comprehensive data set than would ever be possible using conventional survey methods.



A single LiDAR vehicle can collect more survey grade data in a single day than multiple surveyor teams using the traditional survey equipment.



to 70 MPH, each square meter of survey area will contain many thousands of survey points.

Further significant time saving benefits can be recognised by using mobile LiDAR: as the data point cloud contains all of the visible data within a project area, it can be used by many departments for a variety of applications and there is no need to keep sending surveyors into the field to collect additional data. The 3D digital models that mobile LiDAR provides can be easily updated and used to generate engineering drawings, base

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maps and volume calculations time and time again, creating an almost living 3D model of the project which can be used for future projects.

COST SAVINGS

It goes without saying that the speed at which mobile LiDAR data can be collected and the amount of data that is collected in a single pass will result in significant cost savings. A single mobile LiDAR vehicle can collect more survey grade data in a single day than several teams of surveyors using traditional survey equipment. There is no need to provide costly and disruptive traffic control systems or create inconvenient diversions. If additional survey information is required, the original LiDAR data points can be queried in the relative comfort and safety of the office, with no need to send a survey crew back into the field.

SUMMARY

Collecting 3D survey grade data using mobile LiDAR systems are being increasingly accepted by the survey and engineering community as a whole and is fast becoming the survey method of choice. Commercially driven hardware and software developments are driving the cost of mobile LiDAR systems down, while at the same time making them more efficient and simpler to operate. Collecting highly accurate 3D data while driving at highway speeds, often referred to as transportation information modeling, is fast becoming the industry standard for Transportation and Infrastructure projects world-wide. ▶

By Sandy Borthwick is Vice President of T&T Braveheart LLC.

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Process Optimization:

How to Get the Best Out of Your Treatment Plant

By Dawn Dierker, B.Sc., CHSC, ATAP Infrastructure Management Ltd.

Is your facility operating optimally... and how do you know?

There are many reasons that you would undertake a plant optimization at your water or wastewater treatment facilities. Each offers challenges and opportunities to improve your treatment operation.

The primary reason that facilities partake in plant optimization is to meet new regulatory requirements. When a parameter such as disinfection-by-products (DBP) becomes necessary, trying different methods to improve plant results becomes very important.

Your alternative would be to add an extra process or constructing a new facility. Therefore, optimizing the equipment, chemical dosages, and processes that you already have, is the most economical.

Often when we complete facility assessments, we discover that the chemical dosages have not changed since the plant commissioning. By getting comfortable adjusting dosages and changing the timing of certain process steps like mixing, settling, etc., operators can use less chemical (in several cases) and save money, while improving effluent results.

There are many instances where overdosing of chemical causes problems further along in the process and creates added costs. Process optimization is the only way to validate that the plant is being operated in the most efficient manner possible.

You can also optimize processes and reduce costs by verifying that the steps in the process are timed appropriately. When we aerate longer than necessary, mix more (or stronger) than we must, or heat a fluid longer (or hotter) than necessary, we are wasting financial resources. Utility charges are one of the highest costs associated with a water or wastewater utility and, ensuring that we are minimizing our consumption, can help us to meet our budgeted costs.

We should also only change one parameter at a time, and then measure the results. Changing too many steps in the process (or dosages) will lead to confusion and the results will not be valid. It is essential to start at the beginning of the process and work your way sequentially through to get good results.

It is also essential to benchmark the results of each step of the process before the optimization begins, so that during optimization there is something to compare the results to.

Benchtop simulations are a valid method of optimizing processes. Once the recommendations for improvement are made, they can be taken to the full-scale facility and then adjustments made as results are analyzed. While performing a benchtop optimization, the operator, consultant, or chemical company representative can imitate many types of processes by using the right equipment. Aeration, filtration, mixing speeds, coagulation, sedimentation, and chemical dosages can all be simulated during an optimization to see if the process can be improved.

Plant optimizations can be performed by the facility operator, a contractor, and in some instances, a process engineer. Having an inexperienced operator view and assist with a person trained in process optimization, can help them garner the skills required to complete the analysis in future.

Optimization can assist the operator in improving the operation of the plant and saving the community money in terms of utilities costs, chemical consumption, blowdown storage, plus other efficiencies. The requirement for better quality effluent, changing source waters, or changes in chemical composition, a process optimization is a definite requirement.

While performing a benchtop optimization, the operator, consultant, or chemical company representative can imitate many types of processes by using the right equipment.



By starting at the beginning and working through the process sequentially, changing one parameter at a time, we can ensure the results of the optimization are valid.



For questions regarding specific situations, please contact the ATAP office and we can assist you with the requirements for your facility. ▶

Dawn Dierker, B.Sc., CHSC, is the Training Manager with ATAP Infrastructure Management Ltd. Dawn has an undergraduate degree in Biology and is certified Class 3 in Water Treatment and Class 2 in Wastewater Treatment.

Sustainable Greenway Project gives Historical Corridor New Life

By Jeff Peters, Urban Solar

Despite a steadily growing population, the number of cars in the City of Vancouver has declined over the years. The City reports that roughly half the trips taken within its borders every day are made on foot, bike or using transit, a statistic that positions Vancouver well in its efforts to become the world's greenest city.

A growing network of city and neighbourhood greenways are connecting communities across Vancouver, boasting the benefits of reduced congestion on the streets and increased opportunities for cyclists and pedestrians to travel safely along car-free corridors.

Among the latest of these initiatives is the Arbutus Greenway. Built on land formerly owned by the Canadian Pacific Railway, it's a prime example of how the revitalization of a historical corridor offers citizens a green option to get from point A to B. Since the City acquired the stretch of land, which runs from the False Creek area to the Fraser River on the un-ceded territories of the Musqueam, Squamish, and Tsleil-Waututh First Nations, a program of improvements and innovative upgrades have brought the greenway up to current standards for accessibility, safety, and aesthetics.

This includes the implementation of pathway lighting that helps keep citizens safe on the greenway, while respecting the

goals of sustainability that underpin the project. To do that, the city looked to B.C.-based solar energy systems specialists, Urban Solar, who applied their environmentally friendly lighting to this unique project.

"Sustainability is a core value at Urban Solar. Public projects like the City of Vancouver's Arbutus Greenway are why we got into this industry to start with," says Jeff Peters, Urban Solar's president. "We're excited to be a part of it."

The public bid process for this project took into consideration Vancouver's goal to become a benchmark for green cities and required the use of Underwriters Laboratories (UL) system level certification. With a corporate focus on sustainability, and industry-leading, UL-certified systems, Urban Solar was awarded this multi-year contract.

To meet year-round lighting needs, Urban Solar's team created a solution using Solar LED Lighting (SLL) series units placed at intervals along the 900-metre stretch between W 33rd Ave. and W 37th Ave. Completely off-grid, the system required no trenching or utility hookup. The only costs associated with the units moving forward will be for maintenance.

The system also includes Urban Solar's ECM Connect™ feature, which utilizes wireless connectivity to provide several

new lighting control features and benefits for reliability. The result is an intelligent lighting system that will enhance the City's urban landscape and contribute to a vibrant and accessible public space for walking and cycling.

The Arbutus Greenway project is part of multi-sector efforts to support Vancouver's Green City Action Plan, an ongoing commitment to embrace sustainability in public works projects and city planning.


"Vancouver is rising to meet the green transportation challenge by creating compact neighbourhoods with higher density to provide easy access to work, shopping and recreation."

Making Vancouver's greenways safer and more attractive to citizens will be key to the city defining the global gold standard for sustainability. As a growing number of Vancouverites opt out of driving, we can expect more transformative projects like this one turning greenways into essential arteries connecting communities in the years to come. ▶



Jeff Peters has been working in the renewable energy field since 2000. Since 2004, he has focused his efforts on solar-powered LED lighting solutions. Jeff founded Urban Solar in 2008 and brings more than 20 years of manufacturing and sales experience to the team.

The solar panels function as lighting all year round, in all conditions. Thank you Bottega Creative (<https://www.bottegapcreative.com/>) for this image, which also appears on this issue's cover.

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What's the Right Budget for a Municipal Government Website?

By Peter Knapp, Upanup

We are often asked by municipalities about how to budget accurately for a new website.

First of all, a caveat: there is no blanket answer in our experience. Every community is unique, and the cost of a municipal website redesign depends on your starting place and the complexity of your goals.

That said, we can provide some ballpark direction that will help if you are creating a budget for your city or municipal government website.

POPULATION

First, the cost of your government website will reflect the size of the population served. Typically, we find that if there are more people living in, investing in, and visiting a region, there are more services to provide, more stakeholders to engage, and more information to make available. This means more website customizations are required. And of course, adding complexity increases project costs.

By population, municipal website budgets tend to fall within the following ranges:

Population Served	Website Design & Development Budget
8,000 to 20,000	\$25,000 to \$75,000
20,000 to 50,000	\$50,000 to \$120,000
50,000 to 100,000	\$75,000 to \$150,000
100,000 to 500,000	\$125,000 to \$400,000
500,000 or more	\$250,000 to \$1,000,000

For populations smaller than 8,000 people, a typical range is hard to pinpoint. Your budget might be \$10,000 for a template-based solution, or up to \$75,000 (and beyond) for a site serving multiple audiences, including tourists. It's important for your provider to understand your unique context, so project scope and cost are a true reflection of your needs.

DESIRED OUTCOMES

If it's your job to budget for a new website design and build, you might look at the table above and wonder: what determines whether a project comes in at the low- or high-end of a typical range? Your project process and desired outcomes have a major effect on cost. To decide a budget for your website project, it's important to answer questions like:

- What kinds of application integrations, data presentment, and login portals are needed?
- Are recreation venues and programs part of the website?
- Is the site architecture and content already done and ready for the new website?

- How much community input and engagement would you like in the website design and development?
- How many design options do you want to see, and how many rounds of revisions to your chosen design?

The more back-end complexity, content requirements and changes, user experience testing, and creative work involved, the higher your project budget needs to be.

ASSOCIATED COSTS

Beyond design and development, an accurate budget takes into account other one-time and ongoing costs associated with your new website.

- **Hosting and security** costs vary based on storage needs, geography (as government websites need to be hosted in Canada), and whether you choose to host your site through a third-party provider or internally through infrastructure maintained by your IT department. Best practices for security, failovers, and backups should be included in these costs.
- **Technical support and maintenance services** keep your new website useful

and up-to-date for the communities you serve. For government websites, we find annual support costs are typically five per cent to 15 per cent of the initial project cost.

- **Licences** are an ongoing cost with proprietary Content Management Systems (CMS), if you choose to go that route. Our team prefers customizing municipal websites with Drupal – a flexible, open-source CMS – so there are no ongoing fees. There may also be licensing costs for third-party applications you want integrated with your new website (like program registration, bill payments, job boards or engagement tools).
- **Content** for your new website can be created internally by your staff, externally by professional content strategists, or a combination of both (as is most often the case). Effective writing and high-quality photography or videography can require an upfront investment. This initial cost pays off through positive user experiences and easy-to-access information, as well as showcasing your community in the best light to potential residents, tourists, and investors.
- **Internal staffing and resources** are a cost often overlooked by municipalities – especially when it comes to content creation, editing, and website updates. Your staff's ongoing work is important for a successful web presence that makes the most of your investment going forward.

Finally, if you're wondering what all of this means for your municipality, we can help. Our team builds award-winning web solutions and we have a track record of happy clients for custom government websites across Canada. We pride ourselves on serving the citizens of each of these municipalities with great online experiences and easy access to information.

You can find this original post and more about our government clients at <https://www.upanup.com/>.

As Upanup's CEO, Peter Knapp provides strategic direction for award-winning digital solutions serving the public and private sectors across Canada.

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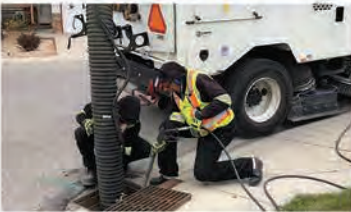
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