POTHOLE-FREE PAVEMENT?
Lifetime of research leads to new roller kit
TELSMITH T-SERIES™ CONE CRUSHERS

Hybrid Thrust Bearing Technology:
We consider our hybrid thrust bearing a lifetime component. Push more amps into crushing, increasing production without downtime.

Hydraulic Relief And Clearing:
True hydraulic overload relief, no accumulator needed. Fewer cylinders with the largest clearing stroke available.

Hydraulic Anti-Spin System:
Compact design with auto-reset extends manganese and bearing life.

Visit TELSMITH.com to see how the extra mile isn’t extra...

IT’S INCLUDED.
Pothole-free pavement?
Lifetime of research leads to innovative new roller kit.
New tech, new blood

Green tech and automation keys to attracting next generation

During my time as a member of the trade press I’ve heard several OEMs across various sectors jokingly use the expression, “It’s not easy being green,” when describing adapting to North America’s ever-changing emission requirement targets. Whenever they use this expression I can’t help but picture the late Jim Henson’s favourite frog, Kermit, singing in a swamp or in the back of Muppet Theatre (I guess this just shows my age – not that I mind, the Muppets will always be awesome). My choice of television shows aside, the expression is certainly accurate. The types of changes that OEMs are forced to make to meet constantly moving emission targets in Canada and the U.S. are difficult, and pricy, to say the least. From meeting Tier 4 Final and Tier 5 emissions regulations for combustion engines, to all-electric solutions, OEMs are constantly evolving their technologies, and that’s a good thing. Not just for the environment, but for the industry’s reputation as well.

Let’s face it, the construction sector as a whole – roadbuilding and aggregates producers included – has a serious image problem. The industry is viewed as bad for the environment and slow to adapting to new technologies; and this will not make recruiting the next generation an easy feat.

In Canada and the U.S. we have some very serious labour shortfalls in our future. Companies in both sectors are already finding it difficult to attract new blood to their operations. From skilled machine operators to maintenance staff, engineers, project managers and site foreman, the industry is currently bleeding decades of knowledge due to the retirement of older staff with very few younger people stepping up to take their places. This is a complex problem, but one that can be addressed through the adaption of greener technologies and practices and increased automation.

Millennials and their younger counterparts care a lot about the environment, and the social and environmental practices of the companies they work for – more than the generations before them. By committing to cleaner technologies and practices, the construction sector – with the help of a few well-placed marketing programs and social media campaigns – will be able to share their greener practices with younger generations as a way to attract people to the sector (yes, some companies are already doing this).

The automation of some heavy equipment will also be a key to attracting younger talent to the industry. Let’s face it, the number of young people interested in getting into heavy equipment and getting their hands dirty is on the decline. By offering younger generations a chance to earn a living operating equipment in an air-conditioned office instead of a pit or quarry will be extremely appealing to some, especially the keen gamers that make up a significant percentage of our future generations. But it’s not just younger people that will be attracted to the automation of equipment. Some of the veteran heavy equipment operators – particularly those that have felt the wear and tear of years of operating equipment in harsher environments – might appreciate the opportunity to work in a more comfortable environment that leaves their bodies feeling a little less beaten up at the end of the day. And who is better suited to train the next generation on the principles of operating heavy equipment while sharing their years of real-world experience operating from the ground floor?

This industry’s future will definitely be filled with greener and more automated technologies, and this might be the key to finding the answer to the industry’s hiring woes.
WE ARE DEDICATED TO YOUR SUCCESS IN EVERYTHING WE DO. IT’S WHO WE ARE.

We know that getting the job done safely, correctly, and profitably is a priority. That is why we offer unrivaled service, technology, and knowledge to drive your success. It is why Roadtec provides you with a level of expertise and training not found anywhere else because that is what you need.
$616-million Highway 427 expansion underway in Vaughan

The $616-million Highway 427 expansion project in Vaughan, Ont. officially got underway on May 1.

The project will extend the highway by 6.6 kilometres from Highway 7 to Major Mackenzie Drive, and widen to eight lanes from Finch Avenue to Highway 7.

Minister of Transportation Kathryn McGarry and Steven Del Duca, MPP for Vaughan, were in Vaughan to break ground on the project.

“Our highway infrastructure is vital to Ontario’s economy,” McGarry said.

“Expanding Highway 427 will help keep people and businesses in York and Peel Region moving.”

When the expansion is completed in 2021, High Occupancy Toll (HOT) lanes with electronic tolling will also be installed on Highway 427 in both directions from south of Highway 409 to north of Rutherford Road — approximately 15.5 kilometres. No existing general purpose lanes will be removed to accommodate HOT lanes, Ontario’s Ministry of Transportation stated.

The average daily traffic on Highway 427 between Finch Avenue and Highway 407 ETR is expected to grow from approximately 115,000 vehicles per day to more than 137,000 by 2021.

Trimble to acquire Viewpoint for $1.2 billion

Trimble announced it has entered into a definitive agreement to acquire privately-held Viewpoint from Bain Capital in an all-cash transaction valued at $1.2 billion. Viewpoint is highly complementary to Trimble’s e-Builder business, and will extend Trimble’s ability to provide more complete and integrated project, jobsite and business workflows across the construction lifecycle.

Currently managing over $400 billion of construction project value, Viewpoint has approximately 8,000 customers worldwide. These firms include general contractors, heavy highway and civil contractors, specialty subcontractors and owners. The transaction is expected to be completed in the third quarter of 2018 and is subject to regulatory approvals, including the expiration or termination of the applicable waiting period under the Hart-Scott-Rodino Antitrust Improvements Act, as well as other closing conditions.

North American equipment market expected to grow by 55%

The North American off-highway equipment market is expected to grow by almost 55 per cent from 2017 to 2022, according to a recent forecast by Off-Highway Research. Forecasted sales of construction equipment for North America are expected to grow from 173,188 units in 2017, up to 267,350 units in 2022.

In North America, the construction equipment market rediscovered its buoyancy last year following a year of declining sales in 2016 as uncertainty swirled around the outcome of the presidential election. With a strengthening economy, historically high construction output and the need to renew an aging fleet of machinery, equipment sales picked up in 2017.

Global construction equipment sales rose 27 per cent in 2017 to 894,000 units, according to new data from the specialist forecasting company. This was the highest the market has been since 2012, and was a marked turnaround from 2015 and 2016 when worldwide equipment sales bottomed-out at 702,000 units.

The market was worth US$88 billion last year, a 25 per cent increase on 2016’s figure of US$70.6 billion.

The types of equipment covered by Off-Highway Research cited in this release to give market size and growth figures are: articulated dump trucks, asphalt finishers, backhoe loaders, crawler dozers, crawler excavators, crawler loaders, mini excavators, motor graders, rigid dump trucks, rough terrain lift trucks (masted and telescopic handlers), skid-steer loaders, wheeled excavators and wheeled loaders.

Source: Off-Highway Research.

Subscribe

Rock to Road magazine is circulated free of charge to qualified individuals holding management and supervisory positions with companies engaged in the aggregate, roadbuilding, ready-mix concrete and asphalt production industry in Canada. The Publisher reserves the right to determine qualification.

rocktoroad.com | web exclusives | videos | breaking news

Paid subscriptions are available. Canada: $36.75 per annum including G.S.T. (six issues’); U.S. and Overseas: $60 US. *Includes annual Buyers’ Guide issue. Please send change of address with label from your last issue. All subscription correspondence must include your title/position, company name and address, postal code and telephone number.
Since 1946 the name HAZEMAG has been linked with many accomplishments in impactor design and control technology. Today's impactor is different. It's better. It's more user friendly, and it's easier and less expensive to maintain. It offers optimum and continuous control over product size, and can do much more. In fact today's impactor, the Hazemag Impactor, can do things never before possible. With over 50 years of experience in design and application of impactors, the future of impacting technology is now here.

ROCK CRUSHING AT ITS FINEST.

ENGINEERED TO BE DEPENDABLE AND RELIABLE.

YOUR PARTNER IN THE AGGREGATE INDUSTRY.
Anyone involved in the aggregates sector will tell you that crushing is a serious business. Running a crushing operation with the utmost efficiency can mean the difference between being in the black or in the red. One key factor for having a crushing operation run successfully is having a strong safety culture in place. It has been proven in the aggregates and roadbuilding sectors, that a company’s safety culture is often tied to the overall success (or failure) of its operations. And as companies expand, they often require the cultivation of separate safety cultures for various types of operations. Simply put, what works for paving crews won’t necessarily make sense for crushing crews, and vice-versa. This is true for even the most successful construction companies across Canada, just ask Kamloops, B.C.-based Dawson Group.

Family owned and operated since 1922, Dawson has been servicing Western Canada’s excavation and paving needs for close to a century, while also being an active producer in the aggregates market. Overall, the company has been one of the most successful and respected construction companies throughout the region for a long time. But even a successful operation like Dawson’s requires
Everything you’d expect from a larger machine
WITHOUT ALL THE HASSLE

MS612
6x12' 3-Deck High Capacity Multi-Slope Screen

Whether it’s 250 or 7,000 t.p.h. you only get that tonnage if you’re running every minute of that hour.

Operators who know the value of time choose ELRUS equipment to reduce downtime and deliver the lowest cost per ton in-spec production.

- No shafts, bearings, gears, seals, sheaves or guards means no parts inventory and fewer breakdowns
- Change screens on all 3 decks in under 2 hours
- Setup and running in minutes
- Easy access maintenance & service points

www.elrus.com/ms612-screen
updates in its procedures and policies from time to time. And sometimes, for the good of the company, they need to take more dramatic actions.

Six years ago, Dawson’s aggregates division was in need of a serious overhaul. The company’s crushing business was struggling with high equipment costs, lower-than-expected productivity in its pits and quarries, and higher than desired workplace incident rates. To help meet the challenges facing the company’s crushing operations, Dawson Group hired safety manager Mark Jastrzebski in early 2012.

“It’s been a real roller coaster,” he says. “I feel very thankful that management decided, when I was hired, to go in a completely new direction. They wanted to set a new safety standard; and knew where they were wasn’t the place they wanted to be.”

Jastrzebski started the crushing division on a path to a safer future by creating a snapshot of the division’s past five years. “Only by understanding the past can we accurately predict the future,” he says, adding that the snapshot showed less than desirable results. About two years after Jastrzebski started his work at the Dawson Group, the company created its current aggregates division, Eagle Rock Construction. At this point, the company had identified that it needed to take its entire crushing division in a new direction.

WORKPLACE WOES
To help get things moving, the company hired 30-year industry veteran Thomas Spooner as its crushing superintendent.

It didn’t take long for him to identify the roots of the crushing division’s underperformance and poor safety record: the workplace culture in the pits and quarries.

“Adding Thomas’ creativity and energy was such a great add for our organization. His work ethic is second to none. Health and safety for his crew was always priority No. 1. When identifying new team members, it was impressive to see how important it was for our management team to bring on workers who are willing to listen and learn,” Jastrzebski recalls.

For about three years, Spooner worked directly with Jastrzebski to address the safety issues affecting the crushing division. They sat down with the crushing crews, supervisors and managers, and
ASTEC Parts. We’re Here. Always.

Combine the world’s largest inventory of in stock parts for asphalt plants, the ability to build and machine custom parts and a fully staffed department of salesmen, technicians and engineers and you have ASTEC parts.

- Over 100,000 parts in stock
- OEM for ASTEC, DILLMAN, Barber-Green, Ess Iee & McCarter
- In-house parts techs and engineers available 24/7
- Over 600 combined years of experience ready to help you

800.251.6042 • www.astecparts.com
slowly built all of the Eagle Rock Construction programs from the ground up, getting input from everyone involved in the process.

“The Dawson Group operations team has an absolute wealth of knowledge within it to draw upon,” Jastrzebski says. “We have over 100 years of industry experience around our boardroom table and everyone is willing to share that experience. Many of our team members are second- and even third-generation Dawson Group workers whom have devoted their careers to making our organization successful.”

COMMUNICATION TOOLS
Fixing the existing reporting system for near-miss incidents was one of the first things Spooner and Jastrzebski decided to address.

“We had an older system of near miss reporting that required the worker who is reporting the near miss to write their name on it,” Spooner says.

This deterred members of the crew from reporting any near misses, which meant not addressing potential safety hazards and maintenance issues in the pits.

“Mark was very instrumental in changing that, so the blame was taken out of it,” Spooner says. “We had managers that would love to write you up, but they didn’t want to spend any money on fixing things… Mark had to fight with those guys everyday and put the bug in management’s ears to look at it from a different angle. Without him, I would never have been able to take the steps I needed to take to get the office to make the changes.”

Since removing the naming of employees from the reporting process, the number of near misses reported has significantly increased.

“If they see something they think is an issue, they bring it to me immediately,” Spooner says.

He has also added daily and weekly check sheets that his crews must fill out, as well as a monthly check sheet for the mechanics.

“The monthly [check sheet] that mechanical fills out every month covers everything from the tires up,” Spooner says. “These instilled the guys to take pride in what they’re doing. The crew I have now is probably the best crushing crew I’ve ever had. We have a crew of proud professionals, whom are even better people.”

These days, daily safety toolbox meetings are part of the regular routine for Eagle Rock’s crushing crews when they start their shifts. To ensure Spooner is well informed when managing multiple sites simultaneously, Eagle Rock management implemented a cloud-based reporting program for the safety meetings, where he can see in real-time who attends the meetings; any concerns that are brought up; and any actions taken to solve existing issues.

This is extremely helpful since Eagle Rock typically runs two to three active sites simultaneously, upwards of 900 kilometres apart. That said, Spooner says he has complete confidence in his current crew’s abilities and values everyone’s opinions.

“We run this whole division by committee, from the ground guys to the foreman, to myself, we don’t brush away anybody’s ideas for safety or production.”

SAFEGUARDING EQUIPMENT
Another aspect of the business that needed to be addressed to improve the safety culture of the division, and its production numbers, was to change how equipment in the pits and quarries was being operated and maintained.

Spooner identified several areas where equipment was being run unsafely, particularly on the conveyor side.

“I put guarding on all of the conveyors,” he says, adding that he won’t accept any new crushing equipment from suppliers that comes without the appropriate safeguards in place. “I made one supplier come back and install guards on all the conveyors.”

When it comes to portable crushers, Spooner says having your fleet equipped with the best safety features available can come with added costs up front, but those features are well worth their price in terms of safety and production.

“I find I get better value out of the high-end stuff,” he says. “For us, being portable, it’ll either be either a Sandvik or a Nordberg. It’s cheaper maintenance, cheaper repair, more throughput… any additional time you can keep your men off of the crushers is safety-value added. I bought a new Nordberg cone crusher last year. It has absolutely no open pulleys and gear boxes, a direct-mount electric motor and no open belts… safety doesn’t cut into your production, it actually enhances it; if you do it properly.”

In addition to ensuring the proper safeguarding was equipped on his fleet, Spooner targeted the existing maintenance procedures as a potential cause for on-site injuries, which were also leading to unnecessary, and expensive, downtime.

“When I first started here, I talked to the purchasing manager about getting some new loaders, he told me he wasn’t giving me anything,” Spooner recalls. “I
Rap is worth what it replaces. To fully realize the value of RAP, you must process it back to its original mix design. As an Astec Industries group of companies, KPI-JCI and Astec Mobile Screens are leaders in RAP processing. We pair that with a wide selection of crushing, screening, and material handling equipment required to fractionate RAP and ensure the highest quality materials throughout the recycling process.

Learn more at kpijci.com
asked him ‘Why?’ and he said, ‘Because you guys brake everything.’”

Spooner knew that if he wanted new equipment to help improve his division’s safety and production numbers, that he would need to prove that he could run the equipment much more efficiently than his predecessors and get the Dawson Group a better return on investment.

Spooner implemented a proactive maintenance plan over his first few years overseeing the division, and Dawson’s purchasing department quickly saw costs in the aggregates division drop like a rock. The costs for the parts and servicing of Eagle Rock Crushing’s fleet rarely stray from the routine maintenance and equipment replacement that comes with running an aggregate operation. Reduced repair costs weren’t the only benefit from his proactive maintenance plan. In combination with the new crew and safety policies in place, it also spiked productivity in the pits.

“Back when I started here, [the crushing crew] could never get over 70 [per cent efficiency],” he says. “Eight-five is the magic number. It’s taken me three years, but last year [the crew] was at 82, and I’m pretty happy about that, compared to 60 to 70.”

Average production in the pits went from 300 tons per hour to 500 tons per hour with almost the exact same equipment.

Nowadays, Spooner has a higher chance of success when requesting new equipment because his team has a proven track record of maintaining current equipment.

“It instills pride in guys when they get to run a decent machine,” he says. “We really struggled in the past to get good people’s resumes in, but last year I was getting flooded with guys that are long-time members of the competition that would jump in a heartbeat if I had a job for them.”

SAFETY SUCCESS

Thanks to Jastrzebski’s and Spooner’s hard work and dedication implementing a new safety culture, lost-time accidents have decreased dramatically.

“We’ve had one lost-time accident in the past four years – a guy tweaking his back cleaning out a big rock from a jaw crusher… he missed three days,” Spooner says.

After cross-referencing Eagle Rock’s lost-time success with the B.C. Mine Safety Awards requirements, Jastrzebski realized that the company would have qualified for an award three out of the past four years. He says next year he intends to submit the necessary paperwork.

“I will do everything I can to get that report in because I want that team to be recognized on the provincial level, and in the eyes of their peers, because they’ve earned it,” he says. “We would have qualified for a Certificate of Achievement (a minimum of 15,000 worker hours and an injury-frequency rate of zero) three of four times. They also have the Stewart/O’Brian Safety Award presented to companies with between 35,000 and 200,000 worker hours and have the lowest worker injury frequency rates. We’re sitting at zero right now, there’s no more you could ask for.”

Spooner and Jastrzebski are currently forming a safety committee and working with the province on creating an addendum to the BC Mines Act for the setup of portable crushing operations.

“We started to set a separate addendum with the BC Mines Act for portable because it was pretty well all made for the big boys,” Spooner says, adding that the current legislation simply isn’t practical for portable crushing outfits. “This isn’t a static system, we move every 30 days.”

The goal will be to build a standard for portable crusher setup over the next year.

“It will be many pieces, all encompassing,” Jastrzebski says. “We’ll use the processes built by the workers for what works best… we know without a doubt this is going to strongly benefit our organization.”

In addition to Spooner’s dedication to safety, Jastrzebski says that the company’s turnaround in its safety procedures would never have happened without the leadership of Lenny Kazakoff, Dawson Group’s paving and aggregate divisions manager.

“I can’t say enough about the kind of support that Lenny provides. He is always willing to find solutions and has supported the safety program 100 per cent,” Jastrzebski says, adding that continuing to work alongside Spooner and Kazakoff will only create a brighter and safer future for all of Eagle Rock Construction moving forward. “The rising tide will float all ships.”
In our last article, we introduced the prompt payment provisions of the new Construction Act, which provide that once a “proper invoice” is given to the owner, the owner must either give a “notice of non-payment” to dispute the invoice within 14 days or pay the invoice within 28 days. In this article, we will continue our discussion in that regard.

To trigger the 28-day requirement to pay, a proper invoice must include certain predictable information: the date of the invoice, the contractor’s name and address, the amount payable, the terms of payment and where payment is to be sent. In addition, the owner and contractor can agree to include additional requirements. These might include statutory declarations, evidence of insurance, schedules, etc. Contractors should take care to review proposed contract terms, as any requirements that are difficult to meet may delay the flow of funds.

Of note, the Act requires that a proper invoice “be given to an owner on a monthly basis, unless the contract provides otherwise.” This is a change from the “common law,” which only calls for interim payments if the contract or subcontract calls for them. Because the Act will continue to apply to all improvements (regardless of their scope or value), every roofer, landscaper and cabinet installer (for example) is entitled to monthly payments, unless the contract says otherwise. In addition, the definitions of contractor and subcontractor continue to include consultants, subconsultants and suppliers. To be clear, prompt payment and adjudication apply to these participants.

As noted above, the owner has to pay within 28 days of the receipt of the proper invoice unless, within 14 days, it has provided a ‘notice of non-payment’. The notice must be given in the form and manner “prescribed” (or mandated), by the Act’s regulations. These have yet to be determined.

Regardless of whether or not he is paid, the contractor must pay its subcontractors and suppliers within seven days, unless the contractor gives a notice of non-payment (again, in the prescribed form and manner) to the subcontractors or suppliers to dispute that payment. The pattern then repeats itself down the construction pyramid: everyone has seven days to pay the ones beneath them unless a notice of non-payment is given to dispute that obligation. To allow subcontractors to know when the proper invoice was given to the owner, the contractor will have to provide that information “as soon as possible” upon the request of the subcontractor.

If an owner gives a notice of non-payment in relation to only part of an invoice, it will have to pay the rest within the 28 days. The contractor who receives the part payment must then pay its subcontractors within seven days unless, again, it gives a notice of non-payment. If the contractor has more than one subcontractor, the part payment is distributed on a pro-rata basis unless the owner’s basis for disputing the contractor’s invoice can be attributed to certain of the subcontractors, in which case the funds will be withheld from those subcontractors, again on a pro-rata basis.

Where a contractor or subcontractor has not been paid, it can give a notice of non-payment to those below to explain the non-payment on that basis. It will, however, have to undertake to bring the person above them to adjudication within 21 days.

If a payor misses a deadline to pay and does not give a notice of non-payment, the Act provides that the payer will have to pay interest, either at “Courts of Justice Act” rates (which are paltry) or the rate set out in the applicable contract or subcontract. In the next issue, we will deal with when and how parties can take construction disputes to ‘adjudication’ to resolve disputes in as early as 46 days.

Robert Kennaley has a background in construction and is now the principal of Kennaley Construction Law, a law firm with offices in Simcoe, Toronto and Barrie, Ont. He speaks and writes regularly on construction law issues and can be reached for comment at rjk@kennaley.ca. This material is for information purposes and is not intended to provide legal advice in relation to any particular fact situation. Readers who have concerns about any particular circumstance are encouraged to seek independent legal advice in that regard.
Castle Rock Enterprises has grown to become a go-to company when it comes to aggregates, civil works, rural roadbuilding and other infrastructure needs throughout Whitehorse and other regions within The Yukon. It’s an impressive feat that was performed in a relatively short period of time.

The company started up in 1995 when the father-son duo of Rick and Ron Bonycastle decided to get into the topsoil and gravel hauling business. One year later the family business began its own screening and crushing operations, working out of a quarry on Haeckel Hill, close...
to the territory’s capital.

“We started out with 40 acres,” says Ron, president of Castle Rock Enterprises, during a tour of his headquarters and aggregates operations. “We now operate the largest quarry in The Yukon.”

The Bonnycastle family business grew considerably after landing a major infrastructure project with the City of Whitehorse in 2002. The project allowed the company to expand into a combination of residential and commercial projects in the area. By 2008, the company had grown to more than 50 employees in peak season; and Rick and Ron took home the Yukon Chamber of Commerce’s Businessmen of the Year Award. The company had grown to hauling upwards of 175,000 cubic metres of gravel annually.

When Rick decided to retire in 2010, the company’s successes caught the attention of the Dakwakada Development Corporation, the business arm of the Champagne and Aishihik First Nation. The Dakwakada Development Corporation purchased the family business and it became a 100 per cent First Nation-owned company that year. With more than two decades of experience under his belt running the operation alongside his father, the company requested that Ron stay on with the company as its president to provide leadership to all of its divisions.

FURTHER EXPANSION
Since coming under the banner of the Dakwakada Development Corporation, the company has continued significant growth.

“We’ve grown another 25 per cent since then,” Ron says.

In 2012, the company added full design-build services that included its own engineering department and a mechanical shop.

Fast-forward to present day and the company has 30 full-time staff and anywhere from 80 to 100 employees in peak season.

“We’re big in civil works, subdivision development, land clearing, underground utilities and aggregates,” Ron says, adding that the company also oversees the municipal
landfill in Whitehorse.

The company also offers land treatment services – a branch of the business started up a few years ago to treat contaminated soil.

“We got into land treatment in 2015 to treat contaminated soil; we also provide emergency spill services,” Ron says.

CRUSH QUICK AND OFTEN
When it comes to producing aggregates in The Yukon, timing is everything. The company produces a variety of aggregate products from sand, gravel, rock and topsoil. In total, the company produces 11 types of aggregate. Harsh winters force the company’s crushing and screening division to produce all its aggregate needs in a condensed seven- to eight-month time period.

“Eighty per cent of our revenues are produced in seven months,” Ron says.

For the crushing side of its business, the company works with a local custom crushing outfit.

“We’ve been working with New Way Crushing for 20 years, running our own screening the whole time,” Ron says.

Having enough aggregates to supply its own operations, and other local needs, can be a challenge in the growing Whitehorse area. To ensure the company always has enough supply on hand, it has been consistently developing its quarries. In 1997, the company had 70 acres slotted for aggregates production. In 2012, it expanded to include another 37 acres, and in 2016 expanded again adding another 98 acres. In total, the company now has 205 acres of land allocated for aggregates production.

INVESTING IN GROWTH
In the winter of 2016, the company decided a portion of its fleet was in need of replacement. It spent $2 million upgrading various pieces of equipment on the hauling and civil side of its operations. In total, the company runs about 100 pieces of heavy equipment in its various divisions.

“All of this new equipment is better on fuel,” Ron says. “We have a fairly mixed bag. Our last order was all Caterpillar gear and Kenworth dump trucks and tractors. Caterpillar’s service is phenomenal, they have a local branch in Whitehorse.”

The company’s newest additions from Caterpillar included 336F and 323F excavators, 966M and 938K wheel loaders, and a D6K track-type tractor. It also runs a collection of Link-Belt and Hitachi heavy equipment and Peterbilt trucks. Having a reliable heavy-hauling fleet isn’t just a vital part of the company’s aggregates business, it’s also a key part of its civil works division.

Going forward, expansion is still on the agenda for the fast-growing First Nations-owned company. That said, it hasn’t lost sight of the bread-and-butter of its operations.

“We’re starting to look at some mining work, trying to do some work with gold mining companies,” Ron says. “But our big focus is still water and sewer installation and maintenance.”
IN YOUR WORLD,

THE POWER OF CHOICE
IS WHAT MAKES THE GRADE.

Start with eight motor grader models, including the new 620G/GP and 622G/GP that use 10% less fuel than our larger 670G/GP models. Then choose from our new dual-joystick, EH fingertip, or traditional mechanical controls – all with a steering wheel. The icing on the cake? Horsepowers that are tops in their respective model categories. Choose your model. Choose your controls. Then Run Your World.
Since the construction of the first roads, potholes have plagued road infrastructure around the world, and people have been trying to find ways to make them disappear. So when I first heard about a revolutionary compaction technology designed by Carleton University’s director of the Infrastructure Protection and International Security Master’s Program, Dr. A.O. Abd El Halim (“Halim” to his friends and colleagues), I was extremely excited to meet the man and his technology.

I drove to the Ottawa area to meet the man behind the technology at a pub in Gloucester, Ont. Shortly after I arrived and we exchanged pleasantries, a waitress came to take our order. Halim asked her for two raw eggs in a dish – a strange lunch order, I thought. He quickly explained that the eggs were not for eating,

Lifetime of research leads to innovative new roller kit

> Since the construction of the first roads, potholes have plagued road infrastructure around the world, and people have been trying to find ways to make them disappear. So when I first heard about a revolutionary compaction technology designed by Carleton University’s director of the Infrastructure Protection and International Security Master’s Program, Dr. A.O. Abd El Halim (“Halim” to his friends and colleagues), I was extremely excited to meet the man and his technology.

I drove to the Ottawa area to meet the man behind the technology at a pub in Gloucester, Ont. Shortly after I arrived and we exchanged pleasantries, a waitress came to take our order. Halim asked her for two raw eggs in a dish – a strange lunch order, I thought. He quickly explained that the eggs were not for eating,
but for an experiment that required my participation. When the eggs arrived, Halim asked me to take a butter knife and begin tapping the top of the egg gently inside the dish. I tapped the egg until cracks began to form at the top.

Halim then handed me the second egg and asked me to tap it gently in the same spot as the first one, but this time with my fingertip. I tapped several times and nothing happened. He then asked me to tap harder, so I did. Nothing happened. He asked me to tap it harder a third time, at which point the egg slipped loose from my other hand, bounced off Halim (as I watched in horror), then fell to the floor and broke.

"I'm so sorry," I said to both Halim and the waitress that came by to clean the mess.

"That's alright," Halim replied. "Did you see how the egg cracked when the metal tapped it? And how it didn't crack with your finger? This is basically how my technology works."

Back in the mid-1980s, Halim invented a rubber-belted asphalt compactor that was designed to compact without leaving the small cracks in the roads that were being left by some traditional steel and rubber rollers. The idea behind the technology was that the softer, rubber-belted compactor could sit on a section of asphalt for a longer duration of time while exerting lower pressure than traditional rollers, and this would allow for longer continuous contact with the asphalt that would produce crack-free asphalt pavement during the compaction process. He named his compactor “AMIR” after his son.

**AMIR I AND HIPAC**

The first version of the paver (AMIR) was a non-motorized, single-belt system. It was developed and field-tested in Egypt in the mid-80s through financial assistance from the Canadian and Egyptian governments. The Egyptian AMIR motivated National Research Council Canada (NRC) and Toronto-based Lovat Tunnel Equipment Inc. to join Carleton University and Halim to build the first motorized (AMIR I). Approximately a dozen field tests were performed on the machine, compacting layers of sand, as well as asphalt layers. Newspapers and magazines around the world showcased his technology through the mid-80s and into the 1990s, calling it revolutionary to the industry. Halim tried to get it licensed and manufactured by several OEMs, but contract negotiations were unsuccessful.

But in 1996 an Australian contractor named Pioneer Road Services Pty Ltd. decided to have Halim’s compactor shipped to them for further development. The company invested approximately $750,000 into the technology, and developed a dual-belted version of the compactor. This version of the machine was 1.6-metres wide and 12.5-metres long and weighed 16 tonnes. This version would come to be known as the HIPAC compactor; the second generation of AMIR. The company was planning on using the technology during the construction of roads for the 2000 Summer Olympics.

“They used it to construct a road leading from the Sydney airport to the Olympic Village, and continued to use it for several years,” Halim says.

Despite successful field tests over the years in Egypt, Australia and Canada, negotiations continued to be unsuccessful with various OEMs to try and get the compactor manufactured. After decades of hard work on the technology without getting a contract ironed out with a manufacturer that met Halim’s expectations, he decided to put the project on hold and placed the AMIR I compactor in storage and focused on his other research and work as a professor at Carleton University.

**GETTING THE CALL-UP**

The AMIR-I compactor sat collecting dust until Halim received a surprise phone call in 2009, while preparing one of his students for a presentation at an educational conference.

“I got a call in Quebec City from a friend that said, ‘The MTO (Ministry of Transportation of Ontario) needs your roller, can you present about it?’” Halim recalls. “I went to Kingston and gave a presentation. It took two years but the MTO were very kind. They gave me budget… I had a chance to prove its functionality. The MTO started to give up on asphalt on roads and [in some cases] were replacing it with concrete.”
The research budget was used to add engineering capabilities and mechanical improvements, which produced AMIR II.

"MTO has contributed to the project in several ways," says Don Rowat, head of quality assurance with the Ontario Ministry of Transportation Operations' Eastern Region. "Research funding has been provided to Carleton University through the Highway Infrastructure Innovations Funding Program (HIIFP) and also by direct assignment of research grants. Theory has to be put into practice and the MTO has been there for the incremental developments and provided our highways for real-life test sections."

The first field tests of the AMIR II in Ontario took place in 2011. They did not go according to plan. Two contractors that were selected by the MTO to field test the equipment were unable to successfully use the technology. Fortunately, Russ Perry, vice-president of Ottawa-based Tomlinson Group's heavy civil division, saw the potential of the technology and decided to take on the project with a significant investment from his company in 2012.

"He’s a very progressive engineer," Halim adds. "They have a mechanic that is a genius (Stewart Allen)."

TRAK CHANGES

When coming up with a name for the new prototype of the final commercial version of AMIR technology, Halim and the Tomlinson Group decided to call it TRAK, an acronym short for "Tomlinson-Russ-Amir-Kit."

The first drastic change that was required on the existing AMIR-II compactor was an idea brought up to Halim by his father-in-law (Mr. Ingram), who was a highway contractor in Calgary — during a conversation about his struggles to get an OEM on board. "He told me nobody will buy my compactor," Halim recalls, adding that the cost to replace a company’s rollers fleet would be too expensive.

This generated an idea that totally changed the way Halim looked at his compactor. Instead of trying to sell a new compactor to the industry, why not just sell the rollers as a kit? Halim, Perry and Allen all worked on developing a roller kit that uses the AMIR-II paving technology but could be retrofitted to just about any existing compactor on the market.

"We wanted to make sure that if we built it, it was multi-purpose," Perry says. "We’ve got 20 existing rollers, ourselves. We don’t want to scrap them — no one will."

By focusing on developing a retrofitted roller kit instead of a brand-new compactor, Perry was able to solve some of the biggest challenges that plagued the AMIR-II prototype: manoeuvrability and training employees to use the machine.

"We needed a system that would keep the belts aligned so we developed a track with lugs similar to a paver or bulldozer that allowed the track to run smoothly and stay in place," Perry explains. "We also needed a better system for tensioning the belts so we adapted technology from other tracked equipment to ensure we had proper tension, which ensured adequate traction that eliminated slippage when engaging the drives. The last issue was developing a set of tracks wide enough to provide similar coverage as the existing machines so this kit could be interchanged with drums so that contractors could save on having to buy additional machines."

The AMIR-II was difficult to steer and required advanced knowledge of how the machine functioned. This was highly impractical in the field. By equipping an existing paver that can use a 60” to 66” compactor — in this case, a CAT 534B — anyone with experience and proper training using a compactor can operate the new prototype.

"The former model was far more complicated, you basically needed to be a rocket scientist to drive it," Perry says. Halim praises Perry for having the practical experience and knowledge that he lacked when developing the first prototypes.

"A lot of the things Russ saw, I didn’t see," Halim says. "This is the difference between a researcher and a user."

Another design issue addressed by using existing compactors were the paving issues experienced by the AMIR-II when working around curbs.

"The old machine had no guidance system," Perry says, adding that the belts had a tendency of coming off the track when dealing with superelevation. "The belt itself has lugs down the centre track so the track is contained, so it can’t come off anymore."

Another issue that needed to be addressed on the prototype was working with additives and polymers that make asphalt mixes stickier — an issue that didn’t need to be addressed when the original prototype was built. To help solve this issue, Tomlinson worked with an oil company in Hamilton to create different types of non-oil based lubricators that can prevent the asphalt from sticking to the belts (due to the patent-pending process, additional information about the lubrication could not be disclosed at this time).

BIG RETURNS

The MTO see a huge potential for savings if the technology reaches its full potential.

"MTOs main driver for funding the project was evaluating a revolutionary technology that could potentially extend...
the life of asphalt pavements and save sig-
nificant taxpayer dollars. MTO was also
interested in determining if the technology
could produce a low permeability asphalt
surface on bridge decks to help reduce the
ingress of chlorides into the concrete and
lengthen the service life of the structure,”
Rowat says. “With the capabilities of the
new third-generation AMIR equipment,
MTO hopes to construct asphalt pavements
with lower permeability on larger projects,
not just bridge decks. If the permeability
of the pavement is lower, the damaging effects
of water will be reduced and the pavements
will last longer.

“The new third-generation ‘AMIR III’
was recently used (in November 2017) to
construct a test section on Didsbury Rd.
in Ottawa, in partnership with the City of
Ottawa. The AMIR III was tested in a side-
by-side comparison with the most mod-
ern asphalt compaction equipment avail-
able in the marketplace and the results are
very impressive. The AMIR III produced a
superior quality product, which is clearly
visible and measurable in terms of lower
permeability, which is critical for the next
step, writing the specifications for use in
future trial contracts. The compaction us-
ing the AMIR III is equal to or better than
conventional equipment and the AMIR III
does not produce cracks in the asphalt.”

Rowat says that even a slight increase
in the lifetime of asphalt pavements would
produce significant savings for the province.

“A 2016 analysis indicated that if as-
pphalt pavements on MTO’s highways could
last even one year longer, the province
would save, on average, $50 million annu-
ally,” he says.

Tomlinson invested about $500,000 in
developing the new roller kit prototype.
The company believes there is potential
for the technology to reduce the amount
of equipment and number of operators
needed on a jobsite. One compacto with
the new roller equipped could replace
three rollers in a train for certain appli-
cations; reducing the number of drivers
required, Halim says. “At present, the in-
dustry uses three different rollers, which
typically need between 20 to 26 passes,
our roller needs only six to eight passes.”

“We’re hoping, by adapting the rollers
[further], to change that to four passes,”
Perry adds.

Retrofitting the roller kit onto an ex-
isting compactor currently takes between
four and five days. After the retrofit is
completed, it takes one day to swap out
the prototype for another type of roller.

In addition to road paving applications,
Halim says there is potential for the roller
kit to be used on airport runway new con-
struction and rehabilitation projects, if the
roller was manufactured a little wider than
the existing prototype.

If all goes as planned, Tomlinson could
soon see labour and maintenance costs in
its paving division decrease substantially in
the future – and with lower operating costs
comes more competitive bidding for future
jobs. And if that happens, you’ll likely be
seeing roller kits inspired by Halim’s work
on a lot of jobsites in the future; a nice send-
off for a man soon to retire, who dedicated
a lifetime of research to improving road in-
frastructure around the world. Enjoy your
retirement, Halim. May your future jour-
neys on the road of life be pothole-free.

*Halim acknowledges the continuous
financial support of The Natural Sciences and
Engineering Research Council of Canada in
supporting his research.
This year’s Challenge consisted of mid-size, full-size and HD entries – 10 trucks in all – all vying for a win in what is now the 11th year of the Challenge. We tested 10 2018 pickup trucks covering the 2500 HD segment; two midsize and five full-size pickups completed the rest of the 2018 entries. A complete list of scores by model follow, revealing our choice for the winner of the 2018 Canadian Truck King Challenge.

The Testing Method: As most readers know the Canadian Truck King Challenge does what we call “real world testing.” Our journalist judges drive the trucks on a prescribed course empty, then with payload and finally towing a trailer on this same route – one after the other, back to back.
This year judges drove more than 3,000 km during testing while scoring each truck across 20 different categories. These totals are then averaged across the field of judges and converted to a percentage out of 100.

The HD trucks and the midsize category used our usual Head River test loop; while half-tons were tested on a new loop in Halton Hills using the same method.

Midsize trucks carried a payload of 500 lb. and towed 4,000 lb. The half-tons hauled payload of 600 lb and towed 7,000 lb.; while the 3/4-tons towed 10,000 lb. and used 1,000 lb. for payload.

The weights we use never exceed published manufacturer limits.

**Fuel Economy:** Each year we use electronic data recorders during testing to capture real world fuel economy. An outside company, FleetCarma, collects, and translates the data from each truck giving us a unique fuel economy report. One that shows not only empty consumption, but also consumption while loaded and while towing. For these 2018 models, the study will be available in its entirety at our website: www.truckking.ca.

### 2018 MID-SIZE TRUCKS

<table>
<thead>
<tr>
<th>2018 Chevrolet Colorado ZR2</th>
<th>2018 Toyota Tacoma TRD Pro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine: 2.8L Duramax diesel</td>
<td>Engine: 3.5L V6 Atkinson cycle engine</td>
</tr>
<tr>
<td>Horsepower: 186</td>
<td>Horsepower: 278</td>
</tr>
<tr>
<td>Transmission: 6-speed automatic</td>
<td>Transmission: 6-speed automatic</td>
</tr>
<tr>
<td>Drive: 4WD – 2-speed transfer case; front and rear electric lockers.</td>
<td>Drive: 4WD – 2-speed transfer case; rear locker.</td>
</tr>
<tr>
<td>Wheelbase: 128.5-in.</td>
<td>Wheelbase: 140.6-in.</td>
</tr>
<tr>
<td>Cab: Crew Cab – 4-door</td>
<td>Cab: Double Cab – 4-door</td>
</tr>
<tr>
<td>Box: 5’2”</td>
<td>Box: 5’</td>
</tr>
<tr>
<td>Rear axle ratio: 3.42</td>
<td>Rear axle ratio: N/A</td>
</tr>
<tr>
<td>GVWR: 6,200 lb.</td>
<td>GVWR: 6,000 lb.</td>
</tr>
<tr>
<td>Payload limit: 1,100 lb.</td>
<td>Bumper tow limit: 6,400 lb.</td>
</tr>
<tr>
<td>Bumper tow limit: 5,000 lb.</td>
<td>Special feature: All-terrain tires; aluminum skidplates; Fox racing shocks.</td>
</tr>
<tr>
<td>Special feature: Off-road tires; skidplates; suspension lift; DSSV shocks.</td>
<td>Base MSPR: $53,295.00</td>
</tr>
<tr>
<td>Base MSPR: $42,215</td>
<td>Price as tested: $53,295.00</td>
</tr>
<tr>
<td>Price as tested: $45,485</td>
<td></td>
</tr>
</tbody>
</table>

### 2018 HALF-TON TRUCKS

<table>
<thead>
<tr>
<th>2018 Ford F-150 FX4 Platinum</th>
<th>2018 Ram 1500 Limited Tungsten edition Crew 4x4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine: 5.0L V8</td>
<td>Engine: 5.7L Hemi V8 w/MDS</td>
</tr>
<tr>
<td>Horsepower: 395</td>
<td>Horsepower: 395</td>
</tr>
<tr>
<td>Torque: 400 lb.-ft.</td>
<td>Torque: 410 lb.-ft.</td>
</tr>
<tr>
<td>Transmission: 10-speed Select-Shift automatic</td>
<td>Transmission: 8-speed Torque-Flite automatic</td>
</tr>
<tr>
<td>Drive: 4WD; 2-speed transfer case; electric rear locker.</td>
<td>Drive: 4WD; 2-speed transfer case; anti-spin rear diff;</td>
</tr>
<tr>
<td>Wheelbase: 145 in.</td>
<td>Wheelbase: 140 in.</td>
</tr>
<tr>
<td>Cab: Crew Cab – 4-door</td>
<td>Cab: Crew Cab – 4-door</td>
</tr>
<tr>
<td>Box: 5’6”</td>
<td>Box: 5’7”</td>
</tr>
<tr>
<td>Rear axle ratio: 3.31</td>
<td>Rear axle ratio: 3.21</td>
</tr>
<tr>
<td>GVWR: 7,050 lb.</td>
<td>GVWR: 6,900 lb.</td>
</tr>
<tr>
<td>Special feature: Auto stop/start standard; adaptive cruise w/ precollision.</td>
<td>Special feature: Rancho shocks; underbody shield; hill descent; Wi-Fi.</td>
</tr>
<tr>
<td>Base MSPR: $70,579</td>
<td>Base MSPR: $56,725.00</td>
</tr>
<tr>
<td>Price as tested: $78,699.00</td>
<td>Price as tested: $65,075.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2018 Toyota Tundra DBL Cab LTD</th>
<th>2018 Nissan Titan Pro 4X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine: 3.5L V8 EcoTec3 w/ cylinder deactivation</td>
<td>Engine: 5.6L V8</td>
</tr>
<tr>
<td>Horsepower: 355</td>
<td>Horsepower: 390</td>
</tr>
<tr>
<td>Transmission: 8-speed automatic</td>
<td>Transmission: 7-speed automatic</td>
</tr>
<tr>
<td>Drive: 4WD; 2-speed transfer case;</td>
<td>Drive: 4WD 2-speed transfer case; limited slip diff;</td>
</tr>
<tr>
<td>Wheelbase: 143.5 in.</td>
<td>Wheelbase: 139.8 in.</td>
</tr>
<tr>
<td>Cab: Crew Cab – 4-door</td>
<td>Cab: Crew Cab – 4-door</td>
</tr>
<tr>
<td>Box: 5’8”</td>
<td>Box: 5’7”</td>
</tr>
<tr>
<td>Rear axle ratio: 2.31</td>
<td>Rear axle ratio: N/A</td>
</tr>
<tr>
<td>GVWR: 8,000 lb.</td>
<td>GVWR: 7,300 lb.</td>
</tr>
<tr>
<td>Payload limit: 1,100 lb.</td>
<td>Payload limit: 1,500 lb.</td>
</tr>
<tr>
<td>Special feature: Pro 4X off-road package.</td>
<td>Base MSPR: $53,650.00</td>
</tr>
<tr>
<td>Base MSPR: $63,895.00</td>
<td>Price as tested: $56,690.00</td>
</tr>
<tr>
<td>Price as tested: $63,050.00</td>
<td></td>
</tr>
</tbody>
</table>

**2018 MID-SIZE TRUCKS**

The midsize segment was particularly interesting this year as both the contenders were specific off-road models. Toyota supplied us with the Tacoma TRD Pro and Chevrolet sent us a ZR2 Colorado diesel. We were fortunate to get these early in the fall, when there was lots of rain and mud. As with all the contenders this year, we shot video matchups which you can view at our Youtube channel through our website: www.truckking.ca. Just look for Truck King. Links to all the 2018 test videos are listed there.

**2018 HALF-TON TRUCKS**

The half-ton segment, which makes up the bulk of the Canadian pickup market, was fully represented in this year’s Challenge. We tested trucks from Ford, Chevrolet, Ram, Toyota and Nissan. Each manufacturer supplied a truck of its own choice. They decided which trim or accessory package to apply; as well as the choice of engine.
2018 2500-HD TRUCKS

2017 Ford F250 FX4 Lariat
(*there are no changes for 2018)
Engine: Power Stroke 6.7L V8 turbo-diesel
Horsepower: 440
Torque: 925 lb.-ft.
Transmission: TorqShift, six-speed,
SelectShift automatic
Drive: 4WD with selectable two-speed transfer case.
Wheelbase: 159.8 in.
Cab: Crew Cab – 4-door
Box: 6’ 9”
Rear axle ratio: 3.55 with electronic differential locker switch
GVWR: 9,900 lb.
Payload limit: 3,350 lb.

2018 Chevrolet Silverado 2500 LTZ Z71
Engine: Duramax 6.6L V8 turbo-diesel
Horsepower: 445
Torque: 910 lb.-ft.
Transmission: Allison six-speed automatic
Drive: 4WD with two-speed transfer case with hill descent control.
Wheelbase: 153.7 in.
Cab: Crew Cab 4-door
Box: 6’ 6”
Rear axle ratio: 3.73 with auto-lock differential
GVWR: 10,000 lb.
Payeload limit: 2,513 lb.
Bumper Tow limit: 13,000 lb.
Special feature: Z71 adds off-road tires, skid plates & Ranchero shocks.
Base MSRP: $62,865.00
Price as tested: $79,805.00

2018 Ram 2500 Limited Tungsten Edition
Engine: Cummins 6.7L I6 turbo-diesel
Horsepower: 370
Torque: 800 lb.-ft.
Transmission: 6-speed automatic
*note Ram still offers a six-speed manual
Drive: 4WD with two-speed transfer case.
Wheelbase: 149.5 in.
Cab: Crew Cab – 4-door
Box: 6.4’
Rear axle ratio: 3.42 with anti-spin differential.
GVWR: 9,900 lb.
Payload limit: 2,380 lb.
Bumper Tow limit: 17,160 lb.
Special feature: auto-leveling rear air suspension.
Base MSRP: $69,995.00
Price as tested: $92,105.00

2018 2500-HD TRUCKS
Testing of the Big Three HD diesel powered pickups took place during the first real cold snap in November. The weather was nasty. I remember thinking that for truck testing, in Canada, it was actually appropriate; because unlike magazine awards that come out of the deserts of California or Texas, Truck King is homegrown, tattooed red and white and very often frozen.

ABOUT THE WINNER:
2018 CHEVROLET SILVERADO 2500 LTZ Z71
The winner of this year’s challenge is a truck that has been refined year after year adding technology and improving its diesel engine. It’s now, in the opinion of the judges, the best 2500-series HD hauler on the market. This 2018 version of the Silverado HD came to us equipped with a new generation of the 6.6L V8 turbo-diesel. It’s been redesigned with a new cylinder block and heads. Its oil and coolant flow capacity has been increased and the turbo-charging system is now electronically controlled. Horsepower has increased to 445 and torque now reaches 910 lb.-ft. Ninety percent of both numbers are achieved at just 1,550 rpm.

A new two-piece oil pan makes the Duramax quieter and also houses an integrated oil cooler with 50 per cent greater capacity than found on the old engine. Of particular interest
to Canadians will be the new Duramax cold-weather performance. With microprocessor-controlled glow plugs, the engine requires less than three seconds to preheat in temps as low as -29°C. These new ceramic glow plugs adjust current to each plug based on outside temperature. This new engine continues to be coupled to the Allison 1000 six-speed automatic transmission, which has a stellar reputation.

Also new is a redesigned air intake system which uses an integrated hood scoop that traps snow, sleet and rain. It drains it away from the breather allowing cool dry air to get to the engine without clogging it up.

But past the mechanical updates, this Chevrolet impresses with the number of electronic driver assist features that make moving loads easier and safer overall. Among many are: a new Digital Steering Assist that improves road handling; new tire pressure monitor system now includes a tire fill alert; all full Driver Alert Package including lane departure warning, forward collision alert, safety alert seat and front and rear park assist. GM’s longtime StabiliTrak stability control system has been updated to include rollover mitigation technology, a tie-in to the trailer sway control and hill start assist.

Visual help is found in the Chevrolet MyLink with an 8-in. diagonal touchscreen. Of particular interest is the camera system that broadcasts on this centre mounted touchscreen (now standard on all models with cargo box). It shows reversing images that make hooking up easy – whether it’s to the bumper hitch or the in-bed fifth wheel. An around-the-truck view assists in parking maneuvers. While driving the signals now activate cameras in the mirrors showing images down the side of the truck, highlighting the blind spot. Other improvements include: an available Gooseneck/5th Wheel Trailering Prep Package that includes a spray-in bedliner. Electronic upgrades include wireless phone charging and remote locking tailgate and the 4LTG Wi-Fi right in the truck.

Thank you and congratulations to all the participants and winners in the 2018 Canadian Truck King Challenge. For more detailed information on all of this year’s entries, please visit www.truckking.ca.

---

**2018 CTKC FINAL SCORES**

<table>
<thead>
<tr>
<th>Category</th>
<th>Model</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2018 Full-Size Pickups</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chevrolet Silverado Z71 1500 LTZ</td>
<td>71.4</td>
</tr>
<tr>
<td></td>
<td>Ram 1500 Limited Tungsten edition Crew 4x4</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>Ford F-150 FX4 Platinum</td>
<td>75.6</td>
</tr>
<tr>
<td></td>
<td>4x4 Toyota Tundra DBL Cab LTD</td>
<td>65.7</td>
</tr>
<tr>
<td></td>
<td>Nissan Titan Pro 4X</td>
<td>68.5</td>
</tr>
<tr>
<td><strong>2018 HD Pickups</strong></td>
<td>RAM 2500 Limited Tungsten - diesel</td>
<td>72.4</td>
</tr>
<tr>
<td></td>
<td>Chevy Silverado LTZ 2500 - diesel</td>
<td>80.7</td>
</tr>
<tr>
<td></td>
<td>Ford F-250 FX4 Lariat - diesel</td>
<td>75.3</td>
</tr>
<tr>
<td><strong>2018 Midsize Pickups</strong></td>
<td>Chevy Colorado ZR2</td>
<td>75.9</td>
</tr>
<tr>
<td></td>
<td>Toyota Tacoma TRD Pro</td>
<td>66.4</td>
</tr>
</tbody>
</table>

**2018 HD category & OVERALL Canadian Truck King Champion for 2018**

Chevy Silverado LTZ 2500 - diesel
From fixing gravel roads to twinning more stretches of 100-series highways to rehabilitating the province’s third-longest bridge, Nova Scotia’s Department of Transportation and Infrastructure Renewal (TIR) has assembled an ambitious five-year highway improvement plan. TIR is launching the Plan with a bang: The 2018-19 budget, at $285 million, and spread out over 180 projects, is the most generous since the $281-million budget of 2012-13, and is about $70 million more than the average annual budget for the past four years (The province has 23,000 kilometres of roads and highways). The Plan lists 14 major highway construction projects for 2018-19, with most of them on 100-series highways (they account for $115 million of the 2018-19 budget). While they include a handful of access improvements, eight are multi-year projects, such as more twinning work on Highways 101, 103 and 104, all three of which are scheduled to last until at least 2022.

The Plan notes three projects for which roundabouts will be...
You want to spend your time keeping your business running smoothly — not deciding which of
the thousands of machine alerts you receive are important. That’s why ActiveCare Direct does the
work for you. The experts at the Volvo Uptime Center filter out the noise, and you receive only the
information that’s important to you — actionable insights to keep your machines up and running.
Volvo continues to push boundaries in telematics, so you can push boundaries on the job.

Contact your local dealer, or visit volvoce.com/ActiveCareDirect for complete details.

*ActiveCare Direct is free for a year on applicable new machine purchases. Contact your Volvo dealer for details.
built: on the 101 exit for Digby; Granite Drive in New Minas; and for the new New Minas Connector, on the 101, for a total of four roundabouts.

In June 2017, TIR noted that it had 32 roundabouts, but this may not be correct, by standard arithmetic. In TIR lingo, revealed in a caption under a photo for the Trunk 7 Interchange outside Antigonish, two roundabouts may be referred to as “a roundabout.” Therefore, the number of roundabouts in the province could be many more than 32.

“In general, roundabouts are a safer alternative to traditional 90 degree intersections; however, different traffic conditions call for different solutions. Engineers study one intersection at a time and consider a variety of factors when determining whether a roundabout is the best solution for an intersection. These factors include improved safety, traffic conditions, geometry and infrastructure,” says Marla MacInnis, media relations advisor for the Province of Nova Scotia.

Of note, perhaps, for companies with concrete roadbuilding expertise, is the repaving of the 10.9-kilometre section of the 101 running eastward past Ellershouse, a rare concrete feature laid down in 2003, according to TIR. Does TIR do much concrete roadbuilding?

“TIR does some... concrete pavement becomes competitive with asphalt and more cost effective in areas with high traffic volumes and heavy trucks stopping and turning. Therefore, concrete is not as competitive in jurisdictions such as the Maritimes. Where concrete pavement has been used in Nova Scotia, there was a significant life cycle cost analysis premium placed on them in the tender to even the playing field with asphalt’s lower construction costs,” MacInnis says.

Of interest to others will be how TIR plans to handle the twinning of the one-kilometre long causeway that crosses the Avon River in Windsor – part of the twinning of the section of the 101 between Three Mile Plains and Falmouth. Bemoaned as an environmental disaster by some, and as a gift to the town’s waterfront by others, will it simply be widened with more fill, or changed with, perhaps, a bridge feature, to return it to being a tidal river, with its salmon run, that it once was?

ATIR lists 82 asphalt projects for 2018-19, valued at $101.5 million. “Approximately 10 companies will be involved in asphalt work this year,” MacInnis says.

They include a dozen 100-series repaving tasks, repaving “arterial/collectors,” and...
repaving local roads. Pavement strengthening, to allow for heavier loads, single-lift overlays and maintenance paving are other descriptors TIR uses to characterize the asphalt work to be done elsewhere.

TIR notes in the Plan that pavement preservation is an important goal: “Spending $1 on pavement preservation before a paved road is 15 years old can eliminate or delay having to spend $6 to $14 on rehabilitation or reconstruction when the pavement surface has failed.”

MacInnis adds, “Pavement preservation is either chip seal, micro seal or a thin lift of asphalt placed over an asphalt surface that was paved approximately five years earlier. Rehabilitation occurs when the asphalt surface has completely failed and it needs to be rebuilt. This may also include the replacement of drainage structures and improving the road drainage.”

Judging from the sorry state of many secondary paved roads, riddled with tire-destroying potholes and long stretches of failed subbase, there will be lots of rebuilding to keep contractors’ heavy machinery revving. One such obstacle course, between Berwick and Aylesford, in Kings County, is on this year’s hit list as a 6.3-kilometre project.

Nova Scotia has about 9,000 kilometres of gravel roads, and TIR has created a new funding category called the Gravel Road Program. With a budget of $20 million, it consists of 81 separate projects from Cape Breton to Yarmouth. All of them listed in the 2018-19 fiscal year, none are noted for the remaining four years of the Plan. These apparently do not include regular grader maintenance for gravel road.

The Plan states that the province has 4,100 bridges. Thirty-seven of them are slated for rehabilitation or replacement in the Plan, and TIR has allocated $29.1 million of the 2018-19 budget to get shacking on the first 10. Strung out from 2018 to 2022, the 37 bridges run from a small one in Hillaton, on Route 358 outside Canning, in Kings County, to four seasons of work on the Great Bras d’Or Crossing Bridge, also known as the Seal Island Bridge, in Cape Breton. The Plan refers to major bridge replacements, but provides little detail on just what each bridge project is about, describing each simply as “major bridge projects” or “other bridge projects.”

The Plan does note that three are multiple-year projects: the Lennox Passage Bridge, Bennery Brook Bridge (three years) and the Great Bras d’Or Crossing Bridge. Completed in 1961, and running between Sydney and Baddeck, this 747-m bridge consists of eight steel box truss spans. Between 2002 to 2004, the road deck was replaced with a precast concrete deck system, and steel trusses reinforced.

MacInnis describes work to be done on the bridge, at least as far as what is currently understood to be required goes: “This work involves a full structural analysis and from that report we will determine what is required for rehab over the next few years. This could include sandblasting, repainting, etc. We won’t know until the analysis is complete later this year.”

In the next four fiscal years, no gravel road projects are listed, and the anticipated pace of work will slow. For example, just 23 asphalt projects are noted for 2019-20, 16 for 2020-21, 17 for 2021-22 and eight for 2022-23. However, the list is not final, as there are several “projects to be determined” notes.
Screening and washing

Rock to Road checks out some of the latest screening and washing equipment in the marketplace.

SUPERIOR INDUSTRIES
Two key features on Superior’s dewatering screen result in maximum moisture removal. Deeper bed depth removes more moisture in the final product; and urethane sidewalls remove moisture from the top and sides of the bed, otherwise left with no place to go. The combination of these two features leaves behind a final product with just 8 to 12 per cent moisture content. That means no drying time is required and your material is instantly sellable, without having to spend any time in a stockpile. Superior manufactures its dewatering screens in several sizes for production up to 400 tph. Each unit is equipped with a +/- 5° adjustable screen angle.

www.superior-ind.com

KEESTRACK
The Keestrack K6 scalping screener is a veteran for tracked mounted mobile scalping screeners. Keestrack introduced this machine in 1996 – the first manufacturer to design a track-mounted direct feed mobile screener. Designed to work in the most difficult of applications, the K6 comes with an 8-cubic-metre robust hopper, heavy steel aprons and variable speed controls. The K6 can separate three fractions at once at a capacity of 600 tph with feed material up to 800 mm in size. The 15” x 6’ double deck offers a total screening surface of 8.1-square-metres on each deck, making it perfect for pre-screening and precision screening. The K6 has all the bells and whistles...
that come with the Keestrack name: mobility, fuel efficiency, low emission engine, and upscale monitoring.

www.frontline-machinery.com
www.keestrack.com

**TEREX MPS**

Terex’s Cedarapids CRS618 high frequency screen is available in modular and portable configurations. Key advantages include the new screen with wire tension system that utilizes high frequency vibration for fine screening, patent pending conveyor support and unique hinged service platform that makes screen changes easier and safer. The unique self-aligning feed distribution plate requires no adjustment when changing screen operation slope. The sliding leg provides easy screen slope adjustment from 35° to 45° in 2.5-degree increments. Maintenance friendly features include hand access ports for the second deck; tool-less feed end curtain; and remote grease lines.

www.terexmps.com

**KLEEMANN**

Kleemann is expanding the Mobiscreen EVO series by a total of four new classifying screens: the track-mounted double-deck classifying screens MS 702i EVO and MS 952i EVO; and the triple-deck classifying screens MS 703i EVO and MS 953i EVO. The two plant sizes have a screening area in the upper deck of 7 or 9.5 square metres. As with the crushing plants, the classifying screens with their convenient transport dimensions and short setup times meet the requirements of contractor crushers. The MS 702i/703i EVO achieves a maximum output of 350 tph and the MS 952i/953i EVO an output of up to 500 tph. Kleemann also places the focal point on safety with the Mobiscreen EVO screening plants. A mobile control panel that can be installed at three different points on the machine operates the screening plant. All plant functions are started automatically – without each side discharge conveyor having to be activated individually. Data on machine operation can also be read off at the operator panel.

www.kleemann.info

**KPI-JCI AND ASTEC MOBILE SCREENS**

Efficiently process aggregate material at any location with KPI-JCI and Astec Mobile Screens’ portable Series 1800 screening and washing plants. The plants can rinse and size up to three stone products while simultaneously washing, dewatering and fine-tuning a single sand product to meet almost any gradation. The company’s knowledgeable experts have designed the screening and washing plants with flexibility and profitability in mind, creating configurations to fit any operation. These industry-leading plants are available with inclined or horizontal single-, double- or triple-shaft screens with two or three decks all on a single chassis. Additional equipment, like a blademill, can be added for versatility. Patented PHB models are the largest portable plants offered by American manufacturers. These self-contained, self-erecting plants...
reduce set-up and tear-down time, giving producers more uptime and increased profits. KPI-JCI is able to provide a single source for all processing needs. It offers a full line of supporting equipment and everything from individual, portable plants to turnkey systems.

www.kpijci.com

CDE
The CDE AquaCycle A900 thickener, with a capacity of 900m³/hour joins the CDE leading water recycling suite of products to bridge a gap in the market. The AquaCycle water management system provides an efficient alternative to water extraction from natural sources by recycling up to 90% of processed water, ready for immediate re-use by the system. The AquaCycle A900 thickener becomes the sixth product in the CDE AquaCycle thickener range. Feed capacities across the AquaCycle range now span from 100m³ per hour to 1,500m³ per hour, with the A900 filling the gap for operators who want a feed capacity higher than 600m³/hour but lower than 1,500m³/hour. Processing 900 m³/hour and with a sludge capacity of 45 tph, it is intended to give clients looking for a median alternative to the A600 and A1500 models.

www.cdeglobal.com

HAVER & BOECKER
Haver & Boecker offers the skid-mounted Hydro-Clean 1000 Wash Plant as a complete solution. In addition to a Hydro-Clean 1000 washing system combined with a Tyler L-Class vibrating rinse screen, Haver & Boecker now offers semi-portability by mounting the complete system on a custom skid structure. The opportunity to purchase the three components together saves operations months of time they would have spent on designing and building a skid structure for a wash plant. The system processes as much as 200 tph of sellable product with short retention times, uses minimal water and power and delivers maximum serviceability.

www.havercanada.com

METSO
The design principle of the Lokotrack ST2.8 mobile scalping screen is simple: to optimize capacity in demanding scalping and to minimize unprofitable time on site. Designed with 150 years of industry knowledge, the ST2.8 has the biggest eccentric throw on the market to make it the best unit for the screening of topsoil, demolition waste, river gravel, and even sand applications. Bi-Power is available when operating with external electricity.

metso.com/industries/aggregates

POWERSCREEN
The Powerscreen Chieftain 2200 is designed for operators who require large volumes of high specification products with maximum versatility. The Chieftain 2200 has two highly versatile double deck screenboxes which provide a total screening area of 19.5 sq. m. The maximum variability of the Chieftain offers improved capabilities over its class rivals, especially in sticky scalping applications. User benefits include a quick set-up time (typically under 30 minutes) with hydraulically folding conveyors and track mobility. Features and benefits include an output potential up to 650 tph (715 US tph); two double deck screenboxes; radio controlled tipping grid; integrated high capacity variable speed belt feeder; heavy duty single shaft screenboxes with adjustable stroke, angle and speed; hydraulic screen tensioning (bottom deck); screen walkway and access ladder; and hydraulic folding conveyors.

www.powerscreencanada.com
More than 1,200 people flocked to Nashville at the end of March to check out live demonstrations of the Wirtgen Group’s latest technologies during the company’s Technology Days North America 2018 event held at the company’s North American headquarters in Antioch, Tenn.

The two-day event featured a ribbon-cutting ceremony marking the completion of the expansion of the company’s Center for Training and Technology (CTT), also located on the grounds of Wirtgen America’s headquarters. The CTT is a world-class facility for educating road and minerals technology professionals.

Wirtgen America president and CEO Jim McEvoy and Dominic Ruccolo, CEO of the Wirtgen Group, performed the
ribbon cutting.

McEvoy said that offering the latest technologies for the roadbuilding and aggregates sectors needs to come backed up with proper training options for the company’s customers, dealers and its own staff.

“We see this training effort being hand-in-hand with our value proposition,” he told the crowd. “We see this facility as being really critical. We put just under 3,000 [people] through the facility in 2017.”

One focus of the CTT expansion project was the expanding of the curriculum offered at the facility for customers and their employees.

“For a lot of them it’s about raising the competency of their labour and service techs,” McEvoy said, adding that a few of the new rooms were designed so the CTT can also offer more online remote training.

The CTT was originally built in 2009, but the company found over the years that some of the classrooms were built too large for the type of training they wanted to offer their customers. In addition to more smaller classrooms and increased overall square footage, the expanded CTT also has technology rooms designed specifically for each of the Wirtgen Group’s brands: Wirtgen, Vögele, Hamm and Kleemann. The rooms feature high-tech learning tools such as interactive displays and product simulators. There are also products on display throughout the CTT that show how the technologies work and how they can improve various types of roadbuilding and crushing operations.

The CTT even has a dedicated lab and classroom on site that offers training modules to ensure the company’s customers create the right mixes for their paving operations and optimize their recycling operations.

“We know how the technologies work, can show them process control techniques, and can make sure they’re applied properly,” said Loyd Amos, a member of Wirtgen America’s recycling team that was on site offering a tour of the lab’s classroom. “We’ll even go to them if they want to learn more about this before they get into the technologies.”

Going forward after the expansion, the company expects to train about 5,000 people a year at the CTT.

In addition to the tour of the CTT, attendees at the event had the opportunity to watch a wide variety of live product demonstrations from the Wirtgen Group’s four brands, and see how many of the technologies can be used together.

The equipment showcased included Wirtgen’s lineup of cold recycler and soil stabilizers, and several of its cold milling machines; Hamm compactors, including the Hamm H25i VC compactor with VC crusher drum; Kleemann’s MOBICAT MC 110 Zi EVO track-mounted jaw crusher; and the SUPER 2003-3i Vögele paver, designed primarily for use in highway construction and large-scale commercial applications.

For more information on the Wirtgen Group Center for Training and Technology, visit: www.wirtgen-group.com.
DON’T MISS OUT,
RESERVE YOUR SPACE TODAY!
For more information about this premier event, please contact:

MARK CUSACK, National Show Manager
mcusack@mpltd.ca • Toll-Free: 1.888.454.7469

WWW.NHES.CA
Peter Graham was recently hired as the new director of municipal relations for the Ontario Stone, Sand & Gravel Association (OSSGA). Rock to Road sat down with Graham and asked him about his decades of experience in the heavy building materials sector, his goals as OSSGA’s newest director, and any advice he might have for companies looking to improve their municipal relationships. Here’s what he had to say.

1. How did you first get involved in the heavy building materials sector?

Soon after graduating from the University of Western Ontario in 1985, I was afforded an opportunity to work with St. Marys Cement (Votorantim Cimentos North America, Inc.) as a technical services engineer. This was a great entry point into the heavy building materials sector, as it provided me with an excellent opportunity to not only gain a thorough understanding of the technical elements of cement, concrete and aggregate, but also to interact with both producers and consumers of these materials.

2. To date, what would you say has been your biggest challenge you’ve had to overcome?

Without a doubt it’s the regulatory framework. The industry must navigate through the complexity of more than 25 pieces of legislation and hundreds of municipal, provincial and federal regulations and policies. When I left the industry for a short time five years ago, the talk was about how to harmonize. I’ve seen on my return that the complexity has in fact increased. Don’t get me wrong, regulation is good, and the industry supports a strong enforcement regime, but over-regulation means that aggregate producers are spending millions of dollars to obtain their licences. Monies that could be better spent on more innovative rehabilitation or community enhancement projects.

3. What aspects of the heavy building materials industry have kept you the most engaged over your 30-plus year career?

Definitely the people. Providing opportunities for growth and ensuring a safe environment has always been a priority. This industry involves many moving parts and heavy machinery that can cost someone their life if not handled with great care. Of the utmost importance to me, and to all those who work in this industry, is that everyone goes home as healthy and engaged as when they arrived!

4. As OSSGA’s new director of municipal relations, what are the top priorities that you feel need to be addressed in the short-term? Long-term?

My primary responsibility is to enhance the aggregate industry’s reputation with municipal politicians and staff. Although there are many municipal representatives that have an awareness of our industry there are some who do not understand the value and importance of having and protecting close-to-market aggregates.

To be clear, much of this work has a longer-term focus. However, in the near-term I will be seeking input and insights from our members and municipal representatives on how our industry can do a better job in helping decision makers at the local level understand the benefits we bring to their respective communities. I will be looking to build upon and leverage the good work our members and association staff have put into marketing and communicating the benefits aggregates bring to Ontarians and how our members are working diligently to be socially and environmentally responsible neighbours in the communities in which they operate.

There are so many great examples of responsible producers out there. I will be helping to get the message to municipal staff and elected councillors, telling the story of how the industry is contributing both to the local economy and to their communities. I will be working with local mayors and councillors to provide them the tools to better communicate these examples and facts of our industry with their constituents. I will also be assisting our members in coordinating tours and information sessions so they can see firsthand the inner workings of an aggregate operation, including mitigation measures and rehabilitation.

5. Having strong municipal relationships is key to having long-term, close-to-market aggregate operations. What pieces of advice would you give to aggregate producers looking to build more positive relationships with their neighbouring municipalities?

My advice would be applicable to any industry looking to build positive relationships within a community. Be prepared to listen and clearly understand the expectations of the community – ensure that you convey to them what you can deliver on. Communicate. Communicate. Communicate. Let them know of proposed changes, upcoming events and completed projects. Lastly, but certainly not least, ‘walk the talk’ – follow through and commit to fulfilling your promises. But if you just can’t do it, let them know.
HIGH-LEVEL FLEXIBILITY AND THE BEST SCREENING RESULTS. The new MOBISCREEN MS EVO screening plants stand out with their broad application versatility, ideal transport properties and fast set-up times. With the plant’s state-of-the-art control system, operating conditions can always be viewed conveniently and all machine functions can be controlled easily and intuitively. The efficient MOBISCREEN EVO plants deliver the best possible performance values combined with low fuel consumption and guarantee precise results with a wide range of application materials. This is where flexibility meets precision.
KEEPING YOUR OPERATIONS UP AND RUNNING IS OUR COMMITMENT TO YOU. PPI is now closer to the Canadian market with the Surrey, British Columbia service center featuring robust inventory, pulley re-work, restoration capabilities, and specialty in manufacturing turbine pulleys. We are ready to provide you the products you need when you need them. Our promise is simple: Quality products combined with global customer service that is second to none.

Contact your PPI Sales representative or preferred distributor to get what you need now.