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Drawing a Line in the Road

Should governments get involved in projects that have typically been the domain of the private sector? That’s a question that is front and centre in Nova Scotia these days as crews from the provincial government’s Transportation and Infrastructure Renewal (TIR) prepare to get hands on in the province’s roadbuilding business, following a 20-year hiatus.

It’s a decision that has of course been met with some resistance. It has been highly criticized by the Nova Scotia Road Builders Association (NSRBA) and a number of its allies, including other associations and private sector companies who are crying foul, saying that “government has no business being in business.”

TIR officials counter by saying they really don’t plan to take work away from private sector roadbuilding companies, and the projects they are targeting to bring in house will only account for between 5% and 10% of the province’s chip seal paving and asphalt work. They contend that their main goal is to bring pricing in line when there is little or no competition for roadbuilding work in remote areas of the province. They make some good arguments, pointing to neighbouring New Brunswick, where they also have some in-house crews competing against the private sector and average costs that are staggeringly lower than Nova Scotia’s.

But for NSRBA members, any amount of government work is too much. They ask valid questions, especially when it comes to accountability. They say private sector roadbuilders must warranty their work, adhere to regular quality control checks, and meet environmental and safety standards that are set by the government and monitored by the government. The same government that they now must compete against for business. Their main concern – who is going to hold TIR accountable for accurate financial analysis of its true costs?

Both sides are well prepared for the fight. In covering the issue for this magazine (you can read the full story starting on page 11), I talked with Bruce Fitzner, chief engineer for the province’s TIR Highway Programs, and Kevin Mitchell, TIR’s director of fleet management. They came armed with relevant information such as fact sheets and frequently asked questions. They were also pleased to show their new tools of the trade, including asphalt spreaders, rollers, dump trucks and more. On the other side, I spoke with Grant Feltmate, executive director of the NSRBA. He has gone public with his members’ concerns, spearheading a highly visible campaign that includes radio, television and print communications, all aimed at educating Nova Scotia’s taxpayers on the association’s views on the subject.

So how will this conflict end? Since TIR has already invested taxpayer funds in new equipment and started training crews, it seems as though this program will go ahead regardless of the resistance. On the other side, roadbuilders are asking about their future in the province, and as NSRBA’s Feltmate will tell you, those same private roadbuilding companies are questioning their ability to invest and do business in Nova Scotia going forward.

This is an important issue not just for Nova Scotia, but for the entire country as other jurisdictions look on with interest. Do you have an opinion on the topic? If you do, drop us a note at the e-mail address below and we will print some of the responses in our next issue.
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If the proliferation of new car dealers, big box stores, $35 per plate restaurants and modern housing developments is any indication of the state of the economy in St. John’s, N.L., then Canada’s most easterly city is doing extremely well.

Locals in this region, which is Atlantic Canada’s second largest metropolitan area behind Halifax, attribute the recent boom in the economy to the province’s offshore oil industry and its mining sector. But most residents here are not complaining. The new economy is bringing big dollars into the community, and with those dollars, comes the approval for long-needed infrastructure improvements, including new transportation routes.

One of metropolitan St. John’s fastest growing areas is the suburb of Conception Bay South (CBS). Located just west of St. John’s, this bedroom community that is home to 24,000 residents has experienced huge problems with traffic congestion as Provincial Highway Route 60 passes right through large areas of town. However, a solution is in the works, as a 5.5-kilometre extension to the existing CBS bypass road will divert much of the traffic away from the community. The bypass extension will feature controlled traffic flow with just three interchanges – one at the beginning, one in the middle and one at the end. “When this project is completed, commuters will be able to completely bypass all of CBS’s residential areas and get to work in the city much faster,” explains Mike King, project manager for St. John’s-based Pennecon Heavy Civil, which was awarded the contract for all of the earth work up to the subgrade stage of the project.

King, who has been with Pennecon for about 12 years, says the province went to tender on the project last September, with Pennecon winning the contract over three other companies with a $13 million bid. “We are doing excavation, fill and pipe, and the structures,” adds King. “The crushed stone, asphalt and bridges will go out for tender later. We will also bid on the bridges as we have a division that does that type of work.”

Project Process
After receiving the go-ahead from the provincial government, Pennecon started the project last November and completed everything up to the subgrade at the end of June. Now, King explains, the road will sit idle at this stage for a full year to allow for a freeze-thaw cycle, which will let the materials settle and will minimize future problems.

King says the timing was good for Pennecon as it allowed the company to utilize some of its equipment during the winter months and keep the “core group” of its labour force employed year round in what is typically a seasonal industry, especially in Newfoundland. However, on the downside, he says working through the winter presented...
issues with moisture as last year, the region experienced an overly wet winter, and he notes they were dealing with a silty, sandy material that had up to 20% silt content. “One thing that did help us with the excessive moisture was that we sourced rock for the top metre of the subgrade from a quarry that was just two kilometres from the west end of the project. It was granite instead of the sedimentary rock we typically use, and although it is more expensive to drill and blast, it was close and it provided us with excellent drainage, and that will help prevent frost heave later on.”

Step 1 of the CBS Bypass project was clearing the trees, which King says was subcontracted out to a local firm. Any trees over six inches in diameter were salvaged, either with a feller processor and then sent to another company for additional processing, while smaller trees were mulched. The topsoil and grubbing was then removed from the cleared surface prior to the levelling process being started. “We used a typical fleet of excavators, dozers and trucks to move materials from our cuts to our fills,” adds King.

Pennecon’s inventory of gear includes numerous models from Komatsu, Caterpillar, John Deere and others, and King says at the peak of the project, they had more than a dozen of the huge articulated earth movers working on the bypass.

**Structural Work**

King says they installed pipes as they went along, including ATV and snowmobile crossing pipes. The major structures on the project were long span structural plate arches, which have reinforced concrete head walls and mechanically stabilized earth (MSE) walls. Pennecon Concrete Capital Precast makes the concrete panels for the MSE walls in St. John’s. In total, King says four of these structures were required for the project, including two for roads (one is part of an interchange and one is part of a bridge structure), one for diverting a creek, and one for a hydro penstock, which moves collected water through gravity to a turbine that creates energy and feeds the local power grid.

As for staff, King says at the peak of the project, they had approximately 60 employees on board, a number that dropped down to 45 as the first part of the project came to a close. Throughout the project, Pennecon’s crews worked primarily eleven hours per day on a 10 days on, four days off rotation. King reports they did not have any safety or environmental incidents, which he notes is a reflection of Pennecon’s commitment to recognizing its responsibility in these areas as an integral part of its overall business management.

Now that the CBS bypass project is in a holding pattern for a year, King, who is originally from the St. John’s suburb of Middle Cove, is making a regular commute from St. John’s to Corner Brook where the company is working on a major community hospital project.

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**Pennecon – The Big Picture**

When Pennecon Limited gets involved in a major roadbuilding project such as the Conception Bay South (CBS) bypass extension, they come to the table with a full lineup of resources to get the job done.

For starters, the St. John’s, N.L.-based company, which is part of the Penny Group of Companies, has a Concrete Division that is the largest producer and supplier of ready mix concrete in Newfoundland and Labrador. In addition, Pennecon Concrete manufactures a variety of concrete products, including manholes, catch basins, pipe, box culverts, septic tanks, wall panels, retaining wall blocks, girders and architectural blocks.

To supply its Concrete Division, Pennecon operates numerous quarries, and gravel and sand pits in Newfoundland and Labrador, and in other areas of Canada. Last year alone, the company produced 3,000,000 tonnes of aggregates for internal and external use Canada-wide.

Pennecon Heavy Civil, which is an ISO 9001:2008 registered company, has completed major projects in the mining, transportation, oil and gas, and hydroelectric industries, along with many municipal projects. Providing a combination of essential heavy civil services gives Pennecon Limited a competitive edge in the heavy civil industry. In addition to roadbuilding projects, Pennecon Heavy Civil has played a major role in building bridges, aviation runways, and industrial sites in Newfoundland and Labrador for more than 30 years. They have also tackled a number of major projects across Canada.

One of the larger projects taken on by Pennecon Heavy Civil in recent years is the earthworks and plant site development at the Vale Inco processing plant in Long Harbour, N.L. This mine processing site project began in July 2009.

The work is located on a greenfield site and consists of a main access road to the site, a plant-to-port pipeline corridor, the plant site, several other access roads and pipeline corridors, a site storm water diversion ditch, a quarry site, a camp site and a contractor’s laydown area.

Pennecon says the total aggregate drilled, blasted and crushed over the duration of this project will be approximately 3,000,000 tonnes.

In February 2010, Pennecon’s Capital Ready Mix was awarded a contract from Vale Inco to supply, erect and operate two concrete batch plants at the same site.

With an anticipated 120,000 m³ of concrete over a 27-month period, the two plants are capable of producing 130 m³ per hour combined total, with the primary plant capable of 80 m³ per hour and the secondary or back-up capable of 50 m³ per hour. Both plants are fully automated, winterized and totally independent of each other.
A custom crushing operation streamlines its larger portable spreads with highly mobile conveyor systems.

By Carol Wasson

Aggregate Processing Services Ltd. runs 10 portable crushing spreads and five portable washing plants from site to site throughout Ontario. As a custom crushing operation, the company processes high quality concrete and asphalt aggregates, as well as recycled materials for municipalities and private contractors, and for its sister company, Preston Sand & Gravel, which is a division of E & E Seegmiller, a Kitchener, Ont.-based company with full-service expertise in heavy civil, commercial, land development, municipal infrastructure and airport construction.

Blaine Bell, operations manager for Aggregate Processing Services, stresses the importance of ongoing upgrades to increase the mobility of material handling systems – particularly in applications that demand larger portable crushing spreads. He explains that as various crushing spreads expand into large primary jaw, and secondary and tertiary cone and screen combinations, it becomes imperative that the increasing numbers of transfer and stockpiling conveyors needed to serve these larger plant configurations be as mobile as possible to minimize time in setup and teardown. “Any conveyor will transfer material, but mobility is the key to our portable operations. If you have six or more conveyors and each takes over an hour of labour after relocation, then you’re losing valuable production time. The new flexible conveyor systems in our fleet go from transport to working mode in a matter of minutes,” says Bell, who adds that a large portion of his conveyor fleet are systems manufactured by Superior Industries of Morris, Minn.

Bell and his team acquired the new conveyor units from ELRUS Aggregate Systems, a Superior Industries dealer who specializes in portable equipment. Bell says that the new material handling systems (nearly 30 different Superior Industries conveyors) are delivering solutions that include decreasing setup and teardown time by more than 50%; dramatically cutting fuel costs by minimizing or eliminating loader use; and increasing stockpile volumes by up to 30%.
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On the Road

Currently, Aggregate Processing Systems maintains a large portable spread to crush more than a million tons of material needed for the four-laning of the Highway 11 corridor, a 17-kilometre stretch of bypass for the villages of South River and Sundridge in northern Ontario. The project requires more than 200,000 tons of hot asphalt and enough washed rock to line every drainage ditch and embankment. “Our 3546 jaw feeds a gyratory cone followed by a 6 ft. x 20 ft. screen. An additional cone feeds another 6 ft. x 20 ft. screen as well as a 7 ft. x 20 ft. finishing screen,” says Bell.

At the South River processing site, Superior Slide-Pac Conveyors are used to transfer material from one screen to another, and out to the finished product stacking conveyors. Available in packages of 60- or 80-foot conveyors for a total of up to 240-feet in one load, the system is built with high efficiency rollers at the head end of each of the top conveyors for high-speed transition between transport and operating-ready positions. This allows users to safely slide one conveyor from the other until the set of three is set up in less than a 10-minute time frame. The slide-off method reduces the hazards involved in lifting heavy equipment; and a heavy-duty locking system fastens the conveyors together during transportation. “When we had used conventional stackable conveyors, we had to use either an excavator or a crane to take off the top conveyor,” Bell says. “It would be dangerous to use a loader. You could do it but it would not have been safe. Plus, every time you would pick up the conveyor, there was the chance of bending or damaging it. With the Slide-Pac conveyors we avoid these issues and can operate with speed and with safety,” he adds, noting that on other sites, the operation uses Slide-Pac conveyors in a transfer line to take finished product to feed a Superior TeleStacker Conveyor.

Bell says that one of the operation’s TeleStacker conveyors is soon being moved from a Sudbury, Ont., site to the South River site to stockpile road base material. “With a traditional stacking conveyor you get a lot of segregation, which leads to headaches and penalties. With the TeleStacker conveyors, we can create a fully desegregated stockpile and a consistent uniform gradation,” he says.

Stockpile Segregation

According to Superior engineers, a standard radial stacker can help minimize stockpile segregation, but it cannot overcome it. An automated telescoping radial stacker is the only solution to creating a fully desegregated stockpile. It stockpiles in very thin lifts or layers, with each layer consisting of a series of windrows of material. To accomplish this, the conveyor is in motion continuously – so automation is highly preferred over manual operation.

“Also, the Superior TeleStacker conveyor is a heavier duty, better built unit than other telescoping radial stackers that we have in our fleet. And, its FD Series axle allows us to shift from transport to stockpiling mode in minutes,” Bell says.

Additionally, for stockpiling finished product where greater volume is desired, the company operates three Superior Pinnacle Conveyors in lengths from 80- to 100- to 125-foot units. Designed with a higher angle of incline (22 degrees versus an 18-degree angle on the standard stacker), Pinnacle conveyors have the capacity to stockpile up to 40% more material – or up to an estimated 10,000-ton capacity in one conical pile.

“At the South River site, we have an 80-ft. Pinnacle conveyor that is working on the top layer of the quarry, conveying 10-inch-minus material across the quarry wall to make a surge pile for the cone crushing circuit that is down below. It is a very tight setup. The unit is highly preferred over manual operation.

Lastly, Aggregate Processing operates several Superior Jump Conveyor packages. Stackable for cost-efficient transport, Bell says that the road-portable jump conveyors give them flexibility on any job site as each unit can be easily removed from the line one at a time as the stockpile grows. Also, the units are engineered with adjustable-height axle systems, which allow accurate feed into varying feed heights.

Not surprisingly, the ongoing fuel-cost crisis is causing operations like Aggregate Processing Services to take a much harder look at equipment and material transport costs, as well as haul truck and loader use. In fine tuning the portable fleet, mobility and material handling must go hand in hand to streamline material transport and stockpiling processes – and to gain greater control over quality and costs per ton.

Carol Wasson is a freelance journalist based in Fort Wayne, Ind. She works for Superior Industries and other companies and produced this article for Aggregates & Roadbuilding.
Nova Scotia Conflict

A new government program in Nova Scotia aimed at reducing roadbuilding costs isn’t good news for everyone.

By Bill Tice

Nova Scotia’s roadbuilding business is in for some changes. That’s the word from Bruce Fitzner, chief engineer for the province’s Transportation and Infrastructure Renewal (TIR) Highway Programs as his department implements an initiative that will see some chip seal paving and asphalt work brought back in house.

Having government crews handle some of this work isn’t new, and Fitzner says until the early 1990s it was common practice in Nova Scotia. But since then, all capital roadbuilding work in the province has been completed by the private sector through a competitive bidding process.

“We are bringing some of this work back in house because we have found that in some areas there is little competition,” explains Fitzner. “And in these areas, prices from private sector companies were significantly higher than in areas where there was more competition.”

Fitzner stresses that his department’s plan is not to take work away from private sector roadbuilding companies, and he says they are only looking at completing between 5% and 10% of the province’s chip seal paving and asphalt work in house. The province will also tender for the aggregate and asphalt emulsions required for the in-house operations so the private sector will still have a big part of the work. “Our intention has never been to take over all of the work,” Fitzner explains. “In the past, when a high bid came in, we had two choices. Either award the work, or don’t. Now, if we get a bid that we think is too high, we have the option of doing the work ourselves the following year.”

Making the Decision

Fitzner and Kevin Mitchell, TIR’s director of fleet management, both say the government didn’t take the decision to reinstate some in-house work lightly, especially when they needed to make some major capital investments in new equipment and training. “We looked at the cost of our crews, the price of materials we need, the cost of the equipment we had to purchase and the costs related to having a crew on the road, such as housing and feeding them,” says Mitchell. “We went through that exercise and based on our labour and union agreements, we came up with values that were close to what we are getting from the private sector in areas with competition. But, in the areas without competition, we were finding that our costs for doing the work in-house were significantly lower.”

Fitzner says for the province’s chip seal work, a limited number of bidders is an issue. “There are only two contractors that have historically bid on chip seal paving projects in Nova Scotia,” he explains. “And we feel that definitely contributes to higher prices.”

Looking across the provincial border at New Brunswick, Fitzner says his provincial counterparts in that province have in-house chip seal paving operations and tender some chip seal paving to the private sector. He says when compared to New Brunswick, prices in Nova Scotia are currently two to two-and-a-half times higher. He notes that in New
Brunswick the average cost for single chip seal paving in 2009 was $15,850 per kilometre. That compared to $32,500 per kilometre in Nova Scotia, prior to the TIR initiative. The average cost for double chip seal paving in New Brunswick in 2009 was $35,500 per year, while in Nova Scotia, the average per-kilometre cost during the same time period was $91,000 per kilometre. While Fitzner acknowledges some of this difference can be attributed to different specifications and methods between the two provinces, he says even when this was factored in, the costs in New Brunswick were substantially lower.

**Getting Started**

Despite having to buy some new equipment, the in-house crews aren’t starting from scratch as Fitzner says they already handle some road maintenance in house. “We were tendering out all of the capital work such as the big roadbuilding jobs, but we have kept some of the maintenance work in house so we already have a skilled labour force and we have over 400 pieces of equipment that we can use.”

Fitzner adds that much of that equipment and some of the work force is currently only utilized during the winter months, but with in-house chip sealing and paving being done in the summer, he says they will be able to keep some crews and equipment working year round.

The first stage for the TIR initiative is the chip seal paving, and Fitzner projects savings over previously contracted prices of 30% to 50%. He says the estimated cost of purchasing and outfitting the chip seal paving operation is $2.6 million and the first work will get underway this summer. He expects the government will save $2.2 million per year, so the payback is fast. Fitzner adds that a crew of approximately 26 will be

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**Pushing Back**

As Nova Scotia’s Transportation and Infrastructure Renewal (TIR) department launches a new program this summer aimed at reducing the cost of roadbuilding in the province, many private sector groups and companies are expressing concern, disputing the numbers, and pushing back. One of the biggest critics of the new government program, which will initially see some chip seal and asphalt work be done in house by government crews and equipment, is the Nova Scotia Road Builders Association (NSRBA).

The NSRBA has publicly stated it is “unequivocally opposed” to this decision by the government, and its executive director Grant Feltmate says he believes his association members can deliver these services more cost effectively than the province’s TIR.

“Government has no business being in business,” Feltmate says. “There are strong examples of past entries into the business world by Nova Scotia governments having been financial disasters.”

Feltmate says the government has acknowledged that they will spend about $18 million annually on the initiative and won’t evaluate the program for possibly five years.

“The government has stated there will be no evaluation of this program for up to five years after its inception,” Feltmate explains. “Even at the $18 million per year level, which does not include capital purchases of equipment and an asphalt plant, they could spend approximately $100 million of taxpayers’ money before even checking to see if this program is cost effective.”

“Government has stated there will be no evaluation of this program for up to five years after its inception,” Feltmate explains. “Even at the $18 million per year level, which does not include capital purchases of equipment and an asphalt plant, they could spend approximately $100 million of taxpayers’ money before even checking to see if this program is cost effective.”

Feltmate also questions TIR’s stated level of involvement in the province’s chip sealing and asphalt business. He says at the $18-million-per-year level, which includes $8 million for the chip seal business and $10 million for paving, the government will be a bigger player than they are projecting. “Looking at the distribution of tenders for 2010 of government contracts, the $18 million amount of business would make the government the second largest roadbuilding contractor in the province for Provincial work,” he says.

Feltmate says $18 million “is a very large direct hit on the industry,” while adding that the actual impact is much more significant. “These misguided business plans have led contractors to now look forward with uncertainty as to where this is going. It has caused investments in equipment and people to be put on hold. In a province that desperately needs a much stronger private sector, this intervention sends exactly the wrong message.”

The 153 member company strong NSRBA isn’t alone in its battle with Nova Scotia’s TIR and Feltmate says being highly visible on this issue through radio, television, and print has made Nova Scotians aware of his association’s position. “We have had great support from many substantive organizations throughout Nova Scotia, including Construction Association of Nova Scotia, Trucking Association of Nova Scotia, Canadian Taxpayers Foundation, Canadian Federation of Independent Business, Chamber of Commerce, Mining Association of Nova Scotia and the Canadian Construction Association. In addition both opposition parties have strongly objected to this direction. We will continue to vigorously oppose this poor decision and supply awareness raising information.”

Aside from the dollars and cents aspect of the TIR move and the impact on the province’s private roadbuilders, Feltmate says accountability is another area his association has an issue with. “Who is going to watch the government?” he asks. “Industry is held to very high standards by this government for the work we do. We warranty most of our work. We have regular testing for quality control. We have environmental standards to meet. We have strict safety rules to follow. Who is going to monitor the quality of the work done by the government and who is going to hold them accountable for accurate financial analysis of their true costs?”

Looking forward, Feltmate expects the TIR move will negatively impact his member companies’ ability to do business in Nova Scotia. “Less funds for the private sector will discourage investment and make it more difficult for existing firms to thrive and compete aggressively going forward,” he concludes.
needed for the chip seal paving operation, but no new full-time equivalents (FTEs) will be added as he says staff will be reasigned from other areas.

The Second Stage
Part 2 of the initiative will be the implementation of a mobile asphalt plant and this is scheduled to happen in 2012. Fitzner notes that they expect to pave approximately 100 kilometres per year in house, which he says is less than 10% of the total paving activity in the province.

Fitzner says when looking at some asphalt paving jobs in remote areas of the province during 2008 and 2009, 10 paving tender calls had only one bid, and 74 projects had only two bidders. “These are the types of jobs where we think we can really make a difference and bring the costs in line,” says Fitzner.

Going back into the asphalt paving business doesn’t come at a low price as TIR estimates peg the bill for purchasing and outfitting an asphalt plant at around $6 million, most of this for the mobile asphalt plant, an asphalt spreader, rollers, distributor trucks and trailers. However, as with the chip seal operation, Fitzner expects a quick payback on the investment, noting that they expect to save somewhere in the neighbourhood of $2.5 million per year. He’s already said TIR will subject its paving plant to a thorough audit within a three-to-five-year time frame in an effort to determine if it has achieved the desired results, and he says they will be more than willing to make the results of the audit available to the public.

At this point, a quick walk through the TIR equipment shop and yard near Halifax, confirms that there is no turning back. Still wrapped in protective plastic, a brand new Terex Roadmix CR622RM asphalt spreader is tucked into the corner of a warehouse and other equipment is lined up outside. That includes a pair of Volvo DD112HF rollers, Dynapac CP224 and CC424HF rollers, a John Deere 563 tractor equipped with a power broom sweeper attachment, a Rosco (LeeBoy) SPRHCH chip spreader, and numerous trucks, including dump trucks and tanker trucks with Rosco (LeeBoy) Maximizer II tanks.

Of course, not everyone is thrilled with TIR’s latest venture, especially Nova Scotia’s private sector roadbuilders, who dispute claims that the government crews will be able to do the job for less (see sidebar). However, Fitzner is quick to defend the program. “This isn’t a debate about who can pave roads for the lowest cost,” he summarizes. “The reality is that the private sector’s ability to do things cheaper isn’t always reflected in the tender prices we’ve been getting. We are confident that owning our own asphalt plant will encourage more competitive bidding in areas of the province with limited competition, resulting in better bid prices in the future and delivering more paving for each dollar invested. What is important is that we are able to fix more roads in more communities across the province.”

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The province’s brand new Terex Roadmix CR622RM asphalt spreader is part of the equipment fleet TIR has acquired.
The producers of the Pacific Heavy Equipment Show were very pleased with the inaugural edition of the event, which was held at Chilliwack Heritage Park in Chilliwack, B.C. in early June. The crowds were wowed by over 100 mammoth exhibitors that were showcased live and in action in the pit and also in some static displays.

Exhibitors commented on the high quality visitors to the event and indicated that sales were made and many solid leads were gathered to follow up in the months to come. “Many area contractors visited the show looking for new equipment to streamline their operations, and they were not left disappointed,” said Show Manager Mark Cusack. “The overall impression from visitors and exhibitors was that the move to Chilliwack was a positive one, and we hope to grow the event even larger for the next edition,” added Cusack.
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Building with Software

Contractors speak about new software options and ease of use, applications, training issues and more.

By Treena Hein

Following up on last issue’s look at what’s new in roadbuilding software, we’ll now get the perspectives of users in the field – why they chose what they did, what they’re using their software for, how the training works, best features, tips and more.

In April of this year, Behan Construction in Cobourg, Ont., decided to go with Trimble’s Business Center Heavy Construction Edition (HCE) roadbuilding software, a choice based on previous experience with Trimble and the attraction of simplicity. “We were using three different pieces of software (Terramodel, Paydirt, and Sitevision Office) and HCE promised to combine the functionality of all three into one package,” says Behan’s Construction Supervisor Steve Smith. “We’re still learning the software, but our early impression is that they were successful in attaining this goal.” He says they also purchased HCE because Trimble indicated that they will no longer be supporting Terramodel and no future versions will be coming.

Since April, Smith has so far used HCE to prepare digital terrain models for a few small building sites as well as a large earth-moving job. “The best feature of the software in my opinion is how it deals with 3-D lines,” he notes. “Instead of a ‘set’, which was Terramodel’s definition of two points joined by a line, HCE has created ‘linestrings.’ Linestrings have much more functionality and are much easier to edit if the design changes.”

Smith also really likes the fact that he can watch his model being built in a 3-D view as he adds information to a project. “This lets you see right away if you’ve entered an incorrect value, as you’ll immediately see a ‘spike’ in the model,” he explains. “The other really useful feature is the ‘project cleanup,’ which eliminates duplicate lines, joins line segments, and eliminates zero length lines. This saves a great deal of time when initially cleaning up the engineering drawing.” He says the “drag and drop import” feature is also very useful.

Smith notes that the software is very demanding in terms of hardware requirements and recommends that anyone looking at the software make double sure they have the minimum requirements. “A number of people in the training course were unable to effectively use the software due to hardware limitations,” he says. “In the office, I’ve been using a dual screen setup, which is very useful.”

For using HCE, Trimble recommends using its TSC3 handheld (to survey real-time quantities with the integrated camera and/or automatic GPS geotagging) and the Trimble Tablet (to make design changes in the field, connect to the office for on-the-spot approvals and communicate changes to field crews), but Smith says they use neither. “We have been using the Recon Data Collector for a number of years now with Survey Pro Software,” he says. “We find it works quite well for our applications. I do use a TSC2 with SCS900 just to calibrate our sites for machine controls.”

TopCon

Jim Hartness says he first started looking into buying 3-D modelling software, grade-checking GPS systems and machine control systems in order to do things more efficiently. Hartness is construction supervisor at Shroeder Construction in Austin, Texas, a contractor that handles everything from planning and management to wet utilities and roads on the subdivisions and infrastructure projects that make up almost all of their business.

Hartness chose Topcon Positioning System’s SiteMaster because it seemed to be “the total package,” in his eyes. “It’s been instrumental in pad grading, which is becoming more and more of a norm as materials and fuel prices skyrocket,” he adds. “We also utilize it to find the manholes faster and more accurately than the good old metal detector, as well as making sure the flow line of the pipe is correct.”

Hartness adds that they’ve had many fewer instances of overexcavation since they started using SiteMaster, “due to the ability to...
Mark Pivetta, Dave DeYoung, and John Gleim. Not exactly the kind of guys who’ll talk your ear off. But they will, however, tell you exactly where they stand—especially when it comes to productivity. Which is why we couldn’t have been more grateful that these contractors (and many more) volunteered so much of their own time to help us design Deere excavators. And why we hung on every word they had to say. From an Interim Tier 4-certified engine that actually helps increase productivity, to a cab with unmatched comfort and visibility, the new G-Series Excavators prove that when it comes to innovation, talk is priceless. Learn more from your John Deere dealer or our website.

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quickly check the grade on the fly, and get the revisions to the field before the cuts have been made.”

In Hartness’s view, SiteMaster was a great fit because it allows him and his colleagues the ability to control projects from beginning to end, and fully utilize Topcon GPS technology. One of SiteMaster’s most important aspects for Shroeder is the ability to create 3-D models from the engineer’s CAD files. “Due to the nature of construction, there has never been a perfect set of plans,” Hartness notes, “and [with SiteMaster], we can make changes to the model as revisions come from time to time. We are then able to rapidly get them into the field to be implemented, thus saving time and money. It has also given us freedom to get the information on design-build items to the engineer and developers with actual quantities, so that we don’t do more work than we are getting paid for.”

Since he got it about nine months ago, Hartness has been through training but is still discovering the capabilities of the software (see sidebar). During ongoing use nowadays, he reflects that “When challenges come up, there are multiple avenues to get them solved.” In order to do this, he says, “We try to simplify as much as possible. One of the newest features of SiteMaster is the ability to grey out all line work that doesn’t apply. That is, if I am building a road only, only the program applications of building a road such as horizontal/topo and cross sections are available.” In terms of other aspects he appreciates most, Hartness says, “I really like the elevate line features, and the ease-of-use – the ability to take it to my guys in the field, and they understand it when I need to walk through something over the phone.”

In the field, employees use Topcon’s GR-3 handheld device for satellite tracking, radio, cell and positioning. SiteMaster can also be used with Topcon’s FC-236 handheld device, which runs Pocket-3D software (that in turn integrates with the use of SiteMaster back in the office).

The biggest challenges Hartness has found lie in not having the software on enough machines, and keeping up with the updates. Of the latter, however, Hartness is quick to stress keeping up with the updates is worthwhile. “They are all good changes and I believe most of them come from recommendations of end-users. They really seem to listen to what we want in the field from these systems at Topcon.”

He’d like to get more familiar with Topcon’s Sitelink program, because he sees its advantages (being able to examine job progress in “real time” and share information with the office) as “huge.” “It seems to offer the ability to really keep an eye on what is going on in the field, as well as accurately bill material moved and adjust schedules accurately,” Hartness explains. “The more I learn about this system the more I think this is going to be a direction we will steer to in the future.”

For Shroeder, buying SiteMaster paid for itself in one month due to “simply not having to farm out the work, and being able to do it in house,” says Hartness. One thing he’d like to see added is a way to use it in the estimation process – by tracking the operator, pay rate and daily fuel usage in comparison to actual work performed. He’d also like to see a way to break the jobs up – such as 12,000 cubes of bank material, 5,000 cubes of rock excavation, 6,500 yards of fill – and separate these into files to more accurately price the units of material moved.

Reflecting on all the capabilities today’s hardware and software provides to the contractor, Hartness says he’s been surprised and impressed again and again in the recent past. With all that’s now available, he thinks, “It is only a matter of time till the cloth tape and auto-level with bluetops go away, the same as batter boards when pipe lasers were introduced.”

Treena Hein is a freelance journalist based in Pembroke, Ont. She wrote this article for Aggregates & Roadbuilding.

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Learning the Software

Training time for Trimble HCE depends on individuals’ background, level of experience and desire to learn, says Jamal Mohammed, sales manager at SITech Mid-Canada, the distributor of HCE in Canada. “Experienced software users can become productive in a few hours, others may take days or longer to become proficient,” he observes. “Our goal is to provide support, service, and learning and training tools throughout the process so customers can get up to speed as quickly as possible. Most key workflows are available as video tutorials, and online forums are also available for customers to ask questions and have Trimble staff review project data. We provide an enormous amount of support.”

For Steve Smith of Behan Construction in Cobourg, Ont., training started with working through the tutorials in a class setting in order to get an overall feel for the software but he admits it was in the real world that the learning took off. “The real learning took place once I got back to the office and had to use it to prepare a site,” he notes, while adding that it took him a day or so to figure out the overall workflow and functionality of the tool. Smith says the challenge can be summed up in an overall sense as “simply learning how to do something that you’re used to doing in a different software package and figuring out how HCE requires it to be done.” He gives alignment definition as an example. “In Terramodel, you define the horizontal and vertical alignments separately and combine them into a road,” Smith explains. “In HCE, it’s all in one menu.”

Jim Hartness of Shroeder Construction in Austin, Texas, says SiteMaster training by his local Topcon dealer in Austin (Geoshack) has been, and is still, excellent. “The initial training was from Topcon representatives and they were also top-notch,” he says. “We have since followed up with some ongoing Internet training from Geoshack that has really been great.” As to how long it takes to become proficient at SiteMaster, Hartness says, “there are new situations every day, and we are constantly learning new ways to increase efficiency with this system. I believe to truly see the full capabilities, it will take about two years. I use that as an average, in that many people will pick it up and with the right training and conditions will be off to the races, and some people who may be set in their ways will take more time.”

In terms of ongoing issues where his company has needed help, he says, “Most all issues are user error.” He adds “I’ve found that I come across situations weekly, and call Bill at Geoshack and ask ‘Can I do this?’ and he usually blows me away and starts telling me how to do it. It is like the plans come to life.”
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Commercial and small municipal paving contractors often find themselves between a rock and a hard place. Most take pride in being nimble and flexible, selling on the advantage of quickly servicing the needs of the customer more so than the larger, more established asphalt producer/contractor in the area. They make a living on contracts that the “big boys” typically don’t touch.

Often adjusting their paving schedules, these asphalt contractors will commonly work odd hours – nights and weekends – to accommodate customer requests. Yet, most of these “nimble” operations are missing one critical component to the supply chain: the asphalt mix. They are at the mercy of the asphalt producer’s supply schedule.

“We had difficulties getting the mix when we needed it,” comments Harvey Lalli, president of Superior Asphalt Products, Ltd. in Abbotsford, B.C. Even though there were several large asphalt plants in the area, the producers’ paving crews and schedules took precedence, leaving Superior Asphalt without mix and frustrated. “Night and weekends were the hardest times to get mix,” he adds.

Finding a Solution

Superior Asphalt has been part of the Abbotsford paving industry for more than 35 years, providing private, commercial and small municipal paving services. Over the years, the company’s reputation for delivering a quality end product fuelled its growth and the demand for more and more asphalt.

The Abbotsford market is saturated with asphalt plants operated by large regional and multinational producers making mix for a metro population of only about 175,000 people. The fifth largest city in British Columbia, Abbotsford lies just north of the U.S. border and less than 80 kilometres (50 miles) southeast of Vancouver.

As Superior Asphalt’s mix needs grew, so too did the challenge of getting the asphalt from these suppliers when the paving crews needed it. Keenly identifying the problem, the company’s leadership began looking for a solution to get a dedicated provider of asphalt that would be able to supply mix whenever it was needed.

Superior Asphalt considered purchasing a plant of its own, but even with the temperate West Coast climate that allows for year-round paving, the challenge of competing with the established producers made ownership a difficult prospect for the family-run business. So too did the company’s previous experience with an asphalt plant. “My father owned a plant for a while in the 1980s, but he didn’t have the support structure to operate it profitably,” mentions Lalli.

While purchasing a plant outright was not the right prospect for Superior Asphalt, the company had to get control over their mix supply. The fact that they could not get the mix they needed, when they needed it, limited the company’s growth potential.

At about the same time the company was struggling with these supply issues, Alpha Asphalt, a First Nations business, presented a solution to Superior Asphalt. It would allow Superior Asphalt to focus on paving operations, while giving them a dedicated supply of mix to the paving operations.

The Right Fit

In 2010, Superior Asphalt entered into a partnership with Alpha Asphalt Ltd. “As part of the partnership, Alpha Asphalt owns and pro-
vides day-to-day operation of the asphalt plant,” explains Randy Rizzo, plant operations manager for Alpha Asphalt. “Superior asphalt is the primary, dedicated paving contractor to which we supply our mix.”

The two-way relationship also is beneficial to Alpha Asphalt and First Nations people. “This is the first business endeavour in this industry for a First Nations company,” says Chief Justin George, president of Alpha Asphalt and grandson of acclaimed late actor Chief Dan George. “The business will help create employment and economic development for our people.”

With the partnership in place, Alpha Asphalt worked with Roger Johnson Consulting, Ltd. of North Vancouver to search for an asphalt plant that would fit specific criteria. “First, we were looking for a plant that would meet the tough air quality standards for the region,” says Roger Johnson, president of Roger Johnson Consulting. They also carefully considered production capacity and plant configuration. “Second, we looked at smaller plants for Alpha Asphalt that would fulfill the contract with Superior Asphalt but would also leave room for growth,” he adds.

With Abbotsford near British Columbia’s largest metro area, the emissions standards for the region are modelled after some of the most stringent U.S. standards. “We are in a sensitive air-shed area, where people are very concerned about air quality,” mentions Rizzo. Even before the plant was sited, local residents and the local newspaper, The Abbotsford Times, raised fears and concerns over the plant being a potential source of air pollution.

After reviewing several small plant designs, Alpha Asphalt purchased the Terex E225P super portable counterflow drum mix plant from Terex Roadbuilding and financed the deal through Terex Financial Services. “The plant met all the criteria we were looking for,” says Johnson. Capable of producing up to 225 tons per hour, the E225P asphalt plant allows Alpha Asphalt to make mix for Superior’s paving crews plus gives the company additional capacity to make a salable product for other paving contractors.

Built for quick, low-cost portability, the base plant configuration of the Terex E225P can be moved in only five loads: counterflow drum mixer; baghouse; self-erect silo; four cold-feed bins with scalping screen; and liquid AC tank/control house/fuel tank. To facilitate portability, the base plant has only 20 “plug-and-play” cable connections.

**Custom Modifications**

To meet their specific needs, Alpha Asphalt modified the plant’s configuration. They upgraded to twin 140-ton silos and a 20,000-gallon liquid AC tank, and they added a RAP bin with conveyor. The fuel source for the 75 million BTU drum burner is natural gas. “It’s a cheap and clean fuel source, but you sacrifice some portability,” says Mike Rodriguez, district manager for Terex Roadbuilding.

As equipped, the new plant configuration can be moved in about nine loads. “Our main base of operations will be the Abbotsford location, but we will move the plant should the right opportunity present itself,” says Rizzo.

The plant is sited on Sumas First Nations land in Abbotsford, which is managed by the federal government’s Indian and Northern Affairs Canada (INAC). “This required permission to use the site from the INAC, but Alpha Asphalt was instrumental in helping obtain this approval,” explains Rizzo. “With that hurdle crossed, the next step was the emissions test.”

The E225P includes the latest in clean-running counterflow technology for lowering plant emissions. The plant’s Roto-Aire RA218 baghouse features a 40,000 CMF air flow and 4.5 to 1 air-to-cloth ratio for emissions control.

As soon as the plant was up and running in August 2010, emissions tests were performed. The standards to meet or exceed were: Particulate Concentration of 90 milligrams (mg) per m³; Volatile Organics – 60 mg/m³; Opacity – 20%; and Carbon Monoxide – 200 mg/m³.

“The E225P plant passed with flying colours,” says Rizzo. “Our particulates averaged 60.49 mg/m³, organics were 20.56 mg/m³, opacity was 5%, and CO tested at 59.16 mg/m³.”

**The Payoff**

Perhaps more important than passing the tests, Alpha Asphalt has won public support for the plant. With a preschool located approximately 500 metres from the plant site, Alpha Asphalt is motivated to ensure smooth continuing operations. “We had an open house for neighbours and community members just after opening, and many people could not tell the plant was running,” adds Rizzo. “In addition to low emissions, the plant is very quiet.”

Less than a year into production, the partnership and asphalt plant investment are paying dividends for both Alpha Asphalt and Superior Asphalt. Alpha Asphalt has a dedicated customer purchasing mix from the Sumas First Nations plant site and is making mix for other paving contractors in the area. Superior Asphalt’s overall paving operations are now more efficient and flexible, since they have mix whenever it’s required. They are also seeing new customers. “Our flexibility is opening new doors and opportunities for us,” mentions Lalli.

Rizzo is already looking ahead to the next production phases for the plant. Alpha Asphalt will soon run up to 30% RAP in the mixes, further lowering asphalt production costs. “We also have the plant plumbed for producing warm mix asphalt using the Terex system,” he says. “This will allow us to lower mixing temperatures and further lower plant emissions.”

Out of this unique partnership, frustration has now turned into opportunity and growth, not only for Superior Asphalt but also for the First Nations business of Alpha Asphalt.

**Rick Zettler of Z-Comm in Cedar Rapids, Iowa, is an award-winning writer. He researched and wrote this article on behalf of Terex Roadbuilding for Aggregates & Roadbuilding magazine.**
If you have driven anywhere in British Columbia lately, you have probably rolled over pavement that has been recycled by Green Roads Recycling Ltd. using the hot-in-place (HIP) recycling process.

Since 1989 the Fernie, B.C.-based company has worked on almost every highway in the province and recycled more than 4,500 kilometres of pavement on site.

If you put all that recycled aggregate into 30-foot tandem dump trucks and lined them up bumper to bumper, the first truck would have its back-end in the Pacific ocean, and the last truck would have its grill in the Atlantic.

The business was founded in 1989 by Skip Stothert, who heard that HIP was being pioneered in B.C. and decided to invest in the technology.

His son Shane first began working for the company as a shoveller when he was a student, before working his way through most of the crew positions. He took over as general manager of the business 12 years ago when Skip wanted to take an advisory role.

The company only operates in summer months and uses a crew of 25 – most of them have worked for Green Roads Recycling for more than 10 years. It is still a family business – Skip’s other son Jamie is the operations manager.

Persuading People

As one of a small number of contractors in Canada to practise HIP recycling, the Stotherts have spent a lot of time persuading people that their process is friendlier to the environment – and the balance sheet – than traditional paving methods.

“My dad struggled at first to persuade people to change,” says Stothert. “But then some people within the B.C. government realized it is a no-brainer for saving money and conserving non-renewable resources. We wouldn’t exist without some of the forward-thinking people at the Ministry of Transportation.

“Then there are a few companies in B.C. now and that is driving some competition. There are pockets around Canada where HIP is being used, but it isn’t as widespread as it should be. I think there should be a machine in every region at least – we should be recycling aggregate and oil rather than ripping up and hauling away what we as taxpayers have already paid for.”

In the HIP process, Green Roads Recycling uses a 300-foot-long, rolling train to remove, rejuvenate and re-lay the road surface in a single pass.

The train consists of a series of direct-fired heaters that soften the top 50 millimetres of the road surface until it is pliable enough to be removed, without destroying the pre-engineered mix design or aggregate distribution.

The material can then be mixed with a rejuvenating agent like Cyclogen or Rejuven 8 that reactivates the existing oil in the asphalt.

Adding New Materials

Around 20% to 25% of new oil and aggregate is added to the existing material – this is to allow for any sinkage in the road’s grade and elevation caused by the weight of traffic. Finally the material is re-laid to form a new road surface.

Stothert says HIP machinery works at 20 feet per minute, a slower pace than the traditional resurfacing, which can replace 40 feet per minute. But, he adds, because the rolling train completes the whole process in a single pass, there is little disruption to traffic or nearby businesses.

“Places can go out of business when there is construction work outside their premises for months on end. With our process the machinery comes in, lifts up the old road, mixes it up, then puts it back again and moves on. The road can be driven on 20 minutes later.

“We are recycling a lot of roads in Kamloops, B.C., which is arguably the most sustainable city for roads in Canada, if not the world. Last year, we did a huge section of road on Columbia Avenue over the long weekend. After the holiday, people went back to work and the road was completely new, without them seeing any lane closures or construction delays.

“The beauty of this job is that we recycled this section of road over 15 years ago. This is called a cradle-to-cradle life cycle where materials can be passed from generation to generation almost indefinitely.”

Another advantage of HIP, says Stothert, is that the new road surface is typically smoother than with the traditional milling processes.

Aviation Jobs

Green Roads Recycling has even met aviation standards to be able to recycle runways at Cranbrook, B.C.’s Canadian Rockies International Airport, Penticton, B.C., Regional Airport and Castlegar, B.C.’s West Kootenay Regional Airport.

Stothert explains: “Because asphalt is a
poor conductor, we have to use slow, constant heat on the road so that the heat penetrates right down to 50 millimetres without overheating the top one to three millimetres of the road surface.

“This also means we aren’t constantly stopping and starting the machines, so the smoothness is much better.”

Stothert says HIP works best on roads that have cracking, fatigue and potholing on the surface, but no subsurface damage. An engineering survey at the beginning of each job examines a road core to see if it is suitable for HIP recycling.

Within the next year Green Roads Recycling will be increasingly energy efficient thanks to a new machine that is being developed by the company. They have been using the Super Pre-heater prototype to heat road surfaces for the last two years, and the new Super Post-heater is currently being developed.

The Super Post-heater will use oxygen and pressure sensors to calculate the exact amount of heat needed to penetrate a particular road surface, so that no surplus energy is used to heat the road surface. This means the asphalt is less likely to become charred and give off visible emissions. The heater also has a negative pressure seal, so that no emissions can escape.

Professor Peter Barr of University of British Columbia originally estimated this would lead to a 50% increase in efficiency, although Stothert believes that in reality it is closer to 60%.

A past engineering study in Alberta found that HIP roads last nine to 11 years before they need to be recycled or repaved. The B.C. Ministry of Transportation is currently conducting its own longevity study, and Stothert believes that the average lifespan of modern HIP roads will be 13 to 15 years.

However, he is concerned at the suggestion of adding urban waste to asphalt as a way to divert waste from landfill.

“If you put garbage in, you get garbage out,” he says. “I’d like to see people thinking more about the long-term consequences. If we put plastic or rubber in our roads now, we can’t recycle them and our children will just have to deal with even more contaminated materials in the future when the road reaches the end of its life. I would rather see aggregate and oil in our roads – and that’s it. Those materials have a 50 million year half-life so we can recycle those finite resources again and again.”

Stothert adds: “Roads are the perfect materials to be recycled in place as they are essentially non-reactive. The cost to extract these resources is unquantifiable or immeasurable and quite often the environmental degradation is irreversible.

“We need to treat these resources with the utmost respect, which means preserving and conserving their value in every possible way. Instead of seeing roads as a long-term liability, we should see them as containing appreciating assets – good quality aggregates and oil are non-renewable resources that are going to hold their value even after their functional quality deteriorates. We should see our roads as ribbons of black gold.”

Step by Step: Hot-in-Place Recycling

The hot-in-place paving train includes one or more pre-heaters, two separate miller heating machines and a paver that follow one another, recycling up to two inches asphalt in a single pass.

The pre-heater and both heater-miller units are equipped with oxidizers to eliminate all emissions.

The machinery can be easily manoeuvred over castings, manholes and sharp corners.

Green Roads Recycling Ltd. designs and manufactures its own machinery.

1. The pre-heaters pass over the existing pavement, using direct-fired inspirating burners to soften the material.
2. The A-unit milling machine closely follows, with floating milling heads that remove the first layer of highway lane to a depth of 25 millimetres. A rejuvenating agent is added at this point.
3. Hot, milled, rejuvenated material is windrowed into the centre of the lane.
4. A milling head at the front of the B-unit mills to another 25 millimetres in the central four feet of the road.
5. Between 20 to 30% virgin mix is added via the B-unit’s front-mounted hopper.
6. A conveyor carries the windrow pile over the B-unit’s heaters. The newly exposed surface is heated across the full lane width.
7. A full width mandrel mills the heated surface to a depth of 25 millimetres (a combined depth of 50 millimetres or two inches.)
8. The 12-foot automatic grade control milling head profiles the road base to re-establish the existing grade and cross-slope.
9. The recycled old road and virgin material are combined and thoroughly mixed and elevated into a twin shaft pugmill and then into the paver hopper.
10. A conventional track paver attached to the tail of the B-unit lays the material out as a completely reconstituted or like-new roadway.
11. Since the pavement is replaced at the original level, there is no need to pave shoulders or turning lanes, which show less wear than the main thoroughfare. Overpass clearances and curb heights do not need to be altered.

Due to the single-lane traffic configuration there is continual traffic flow, which minimizes vehicle idling and congestion.


Many of Green Roads Recycling’s crew members have worked with the company for 10 years or more. (Photo by Rebecca Edwards)

Rebecca Edwards is a freelance journalist based in Fernie, B.C.
It’s Time to Stop the Insanity

A national highway network, along with public policy commitment to designate funds to road investment, is needed now more than ever.

By Shantel Lipp

It’s been said that the definition of insanity is doing the same thing over and over again, expecting different results. Nowhere has this been more prevalent than in the way governments at all levels continue to plan and fund their infrastructure development.

January 1958 at the Canadian Good Roads Association Annual Conference then Saskatchewan Premier Tommy Douglas was quoted to say, “In the last 25 years we have gone through a transportational revolution. The internal combustion engine and the inflated tire have changed the whole economy, not only of the North American continent, but of the western world. Roads...have become as essential a part of our economy as railroads were 75 years ago. And I think that we completely underestimate what the demands of motor-vehicle traffic are going to be in the next quarter of a century. I think that if we could look into the future tonight we would realize that we are under planning highway construction all over Canada.”

The province of Saskatchewan is located at the centre of North America and while at one time it was thought that we were too far from distant markets, it is now being realized that we are in fact a direct link to crucial export markets and a dynamic economy.

Trade and transport is the heart of the Saskatchewan economy. More goods are shipped over roads in containers than through any other means of transport. The oil and gas industry needs a solid transportation system for both their exploration and production, and let’s not forget about our province’s ever-growing agricultural sector. This type of progress means there is an increasing demand for more primary weight roads to ensure we move product and remain competitive and it also means greater safety for the traveling public.

There aren’t many people that give a lot of thought to how they get to their end destination on a daily basis. However, restrict their ability to travel freely and it’s a different story. Today travel and transportation is basic to education, health care and social interaction and is a normal part of our everyday lives.

A strong transportation system fuels a strong economy, which is why the federal government chose to invest in infrastructure as a means to revitalize the nation during the global financial crisis. Investing in infrastructure and transportation is a reinvestment into the economy through capital equipment and vehicle purchases and increased employment numbers.

Saskatchewan’s economy is thriving due in part to the province’s recognition of the need for continued investment into our highways. The provincial government has made substantial record level investments into the provincial highways system but it’s still only scratching the surface of what needs to be done if we plan on continuing in a forward direction.

Provincially, as well as nationally, decades of reduced investment in the highway and transportation system has created a backlog of maintenance and repair work required to get our roads back to their intended design life. A national highway network along with public policy commitment to designate funds to road investment is needed now more than ever.

We can’t keep funding our infrastructure through traditional means; it’s time government did things differently. It’s time to stop the insanity.

Shantel Lipp is the president of the Saskatchewan Heavy Construction Association.

Decades of reduced investment in the highway and transportation system have created a backlog of maintenance and repair work. (Photo courtesy of the Saskatchewan Heavy Construction Association)
By late summer, a highly anticipated new piece of heavy equipment will be turning heads at road construction and aggregate sites. Caterpillar has recently unveiled its first truck, the CT660, to the North American market.

The vocational truck was designed with a select few market segments in mind, the aggregates and roadbuilding sectors among them. In fact, Canadian aggregates hauler J.F. Kitching & Son of Queensville, Ont., has served as the lone Canadian test fleet and is the first company in all of Canada to operate a CT660. The company, which runs about 50 trucks hauling product from its gravel pit to local landscapers and construction sites, is in frequent contact with Caterpillar engineers to provide input on how the truck can be improved.

Gary Blood, product manager, vocational trucks, with Caterpillar, said the CT660’s design borrows heavily from the company’s existing line of heavy equipment.

“On average, when customers see the CT660 for the first time, they will be able to tell just by looking at the truck that it’s a Cat.”

The interior of the truck is also pure Caterpillar. Blood said, “We have taken our decades of machine cab design experience to create a truck cab that combines comfort and functionality.”

For instance, the gauges feature a black dial face, white font and red needles to maximize visibility while remaining consistent with other Caterpillar machinery.

“Customers will find the truck has many modular components to make repairs simple and easy,” Blood said. “The modular design of the three-piece hood, grille and bumper makes it simple to replace a damaged component.”

The CT660 was built on the International PayStar platform through a joint venture with International’s parent company Navistar, but nearly every component above the frame rails has been enhanced or redesigned, Blood said. The end result is a truck that’s every bit a Caterpillar, even though it will be assembled at Navistar’s Garland, Texas facility.

Win a New Cat CT660

Vocational truck owners hoping to be among the first to get behind the wheel of the new Cat CT660 Vocational Truck have a once-in-a-lifetime opportunity when Caterpillar launches its “Win a Cat Truck” contest on August 1, 2011.

One lucky winner, chosen through online voting, will be presented with a brand-new CT660—the first model in a full line of Cat On-Highway Vocational Trucks designed and built to deliver the reliability, durability and low cost of ownership customers have come to expect from Caterpillar. The contest is open to residents of Canada and the U.S. For full details go to: http://www.drivecat.com/Pages/TruckBuzz/WinATruck.aspx

“When customers see the CT660 for the first time, they will be able to tell just by looking at the truck that it’s a Cat.”

The interior of the truck is also pure Caterpillar. Blood said, “We have taken our decades of machine cab design experience to create a truck cab that combines comfort and functionality.”

For instance, the gauges feature a black dial face, white font and red needles to maximize visibility while remaining consistent with other Caterpillar machinery.

“Our CT660 truck pairs extremely well with our Cat machines and we believe you will see them working together on sites all over Canada and the U.S. in the near future,” Blood added.

The CT660 seems custom-built for road construction, a business Caterpillar is no stranger to. Understanding the harsh operating environment of a road construction site, Cat designed the CT660 with serviceability in mind. Impact-resistant headlight covers protect the bulbs from road debris and rubber composite fender extensions bounce back into place when contacted.

“You will find the truck has many modular components to make repairs simple and easy,” Blood said. “The modular design of the three-piece hood, grille and bumper makes it simple to replace a damaged component.”

The three-piece stainless grille surround may be the most identifiable of the CT660’s exterior attributes. Inside, Caterpillar wasn’t afraid to deviate from industry norms. It has combined the speedometer and tach into a single gauge to make more efficient use of dash display space and it replaced the glove box with a removable storage bin.

The CT660 was built on the International PayStar platform through a joint venture with International’s parent company Navistar, but nearly every component above the frame rails has been enhanced or redesigned, Blood said. The end result is a truck that’s every bit a Caterpillar, even though it will be assembled at Navistar’s Garland, Texas facility.

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For all of the anticipation surrounding it, Infrastructure Minister Bob Chiarelli’s unveiling of the Ontario government’s “10-Year Infrastructure Plan” on June 24 stirred a reaction more akin to ripples than the whitecaps some might have expected.

True, the 112-page document titled “Building Together: Jobs and Prosperity for Ontarians” is a slick piece of work that doesn’t answer the big questions on everyone’s mind: “How much money and where is it coming from?” True, the 10-Year Plan tends to be an overview and if one chooses to be cynical they could make a case about the lack of significant detail.

Instead, let’s talk about why the new 10-Year Infrastructure Plan is an important document.

First off, it was never intended to be a project list of what and when the province will build over the next decade. Its purpose is to “underscore the Provincial commitment to infrastructure” and it does that. The last time Ontario actually planned its infrastructure investments with anything past the next election in mind, let alone 10 years, was way back when Premiers had names like Frost and Robarts, and the long-term vision created the infrastructure that we still depend on today. Since the early 1970’s and through Premiers of all three political stripes, infrastructure has been an afterthought.

The Plan makes much of the Liberal government’s record over the past seven years and shows clearly that current investment levels are higher by multiples than they were from the 1970s through to the mid - 2000s. The Plan actually touts the beginning if its strategic expansion will continue and that bridges will be a priority.

As an association manager, the new Infrastructure Plan also impresses because its content backs up its statements about the extensive consultations that were held with stakeholders – at least from the road builders’ point of view. Although we can’t claim to have invented the ideas and certainly others were telling Minister Chiarelli the same things, a number of our priorities are directly addressed in the Plan:

- Measureable, state-of-good-repair targets for highway and bridge condition will be implemented.
- Municipalities will be encouraged and eventually required to implement asset management systems in order to access provincial funding.
- The unique needs of Northern Ontario are recognized by making Trans-Canada highway corridors in the North an investment priority (among other specific Northern development strategies).
- Strategic highways investment to support economic development.

The Plan identifies the 400-series of highways as critical to moving export goods to the U.S. border. A ‘corridor-based approach’ will guide investment strategies.

- Implementation of the Plan will be monitored and reported in regular ‘state of the Infrastructure’ reports.
- Although the Plan signals full speed ahead for AFP procurement models and practices such as project bundling which give rise to concerns from some contractors: “At the same time, (the Province) will continue to tender projects in a range of sizes to support small and medium-sized construction companies.”

The new 10-Year Infrastructure Plan stands on its own as the first attempt in many years to look a decade into the future and set priorities based on social, demographic and economic development objectives. It demonstrates commitment to infrastructure renewal and development at a time when a failure to do so would be disastrous for the province, even though it doesn’t talk about the money beyond the government’s current three-year, $35-billion program.

But yes, there still is the money issue. The Infrastructure Plan itself notes quite candidly that even the increased levels of investment in the past several years are just making a dent in Ontario’s infrastructure deficit. Governments at all levels are struggling with debt and deficits and health care is sucking tax dollars into a black hole at an unsustainable pace. It isn’t a crisis of this government’s making, but it is a fiscal crisis and it is going to require some tough decisions and a lot of help from the economy if Ontario is to really embrace an infrastructure “age of renewal.”

VISTA Training Modules

Vista Training Inc. has launched two web-based training modules as part of its Silver Series: Heavy Equipment – Intro & Safety, and Heavy Equipment – Pre-Use Inspection, are designed for trainees new to construction and mining, and are prerequisites for other series modules.

Intro & Safety familiarizes trainees with seven key types of heavy equipment used on mine sites and large construction projects, key principles of worksite safety and recommended practices for equipment startup and shutdown.

The one-hour Pre-Use Inspection seminar teaches trainees how to perform a pre-use inspection on all machine types presented in Intro & Safety.

KPI-JCI and Astec Host South American Visitors

Kolberg-Pioneer, Inc. (KPI-JCI) and Astec Mobile Screens recently hosted South American visitors interested in optimizing their operations with new, high-performance equipment from KPI-JCI and Astec.

Visitors included Alberto Arango Lopez and Adriana Galego of Construcciones El Condor, Fernando Marroquin of Astec Aggregate & Mining Group Sales, Hugo Diaz of Rodriguez y Londoño S.A., Dave McCracken, Latin America sales director for KPI-JCI and Astec Mobile Screens, and Sharon Alink, KPI-JCI international sales coordinator.

Guests visited the KPI-JCI factory in Yankton, S.D., and toured the Astec Mobile Screens factory in Sterling, Ill. Construcciones El Condor purchased multiple KPI-JCI portable plants and the GT145-3D from Astec.

Scoop on Salaries

Global recruiting expert Hays Specialist Recruitment has published its first 2011 Canadian Salary Guide, which includes anticipated salaries across the construction (roads and heavy construction) and property industry, commentary on skills in demand, compensation and benefits trends, and a market summary of 2010 and into Q1 of 2011.

A snapshot of the construction and property industry:

- 19% of companies have had to add additional benefits in order to address recruitment and retention concerns in 2010
- 43% of companies have added to their head count in the last year
- 49% of construction and property companies plan to add to their head count in 2011
- 53% of companies recruiting in the

South American visitors toured KPI-JCI and Astec factories.
engineering sector have identified senior management roles as being especially hard to fill

- 63% of companies have witnessed an increase in business in the last 12 months
- 80% of companies will offer individual performance-related bonuses in 2011

The information was collected through interviews with internal recruiters and existing clients, and polls of more than 1,000 Canadian business leaders.

“After a challenging economy over the last few years, the guide is more important than ever, as people seem to ‘feel’ better about the state of the job market, and this guide gives evidence to support the feeling,” says Chris Moore, of Hays.

According to Moore, four skills are most in demand: willingness to travel, big-project experience, highway experience, and estimating, supervising and project managing for all of the above.

The 2011 Canadian Salary Guide is available in hard copy or PDF format at www.hays.ca/forms/salary-guide-registration.aspx or by e-mailing recruit@hays.ca.

**Terex OC Award**

The Terex manufacturing facility in Oklahoma City, Okla., recently received the Terex Chairman’s Award for Safety and Health after surpassing the 1.2-million-hour mark without a loss-time incident. To celebrate, in March the facility held an all-employee celebratory lunch and ceremony, attended by Terex corporate safety director Barton McMillion and Oklahoma Safety Council director Dave Koeneke.

It’s been nearly two years since the last recorded loss-time incident at the facility of more than 350 workers. “It’s like batting .400 in baseball . . . it happens, but not too often,” commented Drew McCarthick, health, safety and environmental specialist.

**Caterpillar Completes Acquisition of Bucyrus**

Driven by a key strategic imperative to expand its leadership and support for customers in the mining industry, Caterpillar Inc. (NYSE: CAT) has announced it has completed its acquisition of Bucyrus International, Inc. Caterpillar funded the acquisition, valued at approximately $8.8 billion (including net debt), using cash from its balance sheet and debt. The company did not issue equity to help fund the transaction.

Caterpillar Group President Steve Wunning will have executive office accountability for Caterpillar’s Global Mining business, including Bucyrus. “We are pleased to complete this acquisition and are proud to welcome Bucyrus employees to Caterpillar,” Wunning said. “We are bringing together the best people, the best products and the best facilities from both companies. This acquisition is all about growth and unprecedented opportunities. Combined with our aggressive product development and capacity expansion plans, it will position Caterpillar to offer a broad range of surface and underground mining products and solutions to our customers.”

**Volvo Road Institute**

Volvo Construction Equipment has announced its 2011 – 2012 schedule for the Road Institute. The course curriculum ranges from two- to five-day sessions beginning in September and continuing through May 2012, with classes held at two training facilities in North America: one in Chambersburg, Pa., and the other in Phoenix, Ariz.

“The Road Institute focus is tailored to best practices in asphalt paving, and the Volvo commitment to training includes providing these programs as a service to the industry and to give others the opportunity to learn best practices in a controlled environment,” said Dan Snedecor, director of product and sales education. “People attending Road Institute do not need to own or operate Volvo equipment.”

**Atlas Copco Modifies Global Business Area Structure**

As of July 1, the Atlas Copco Group has four business areas instead of three, including a dedicated business area for construction equipment and related services, and another for drilling, mining and associated activities. As part of this restructuring, Atlas Copco has appointed Robert (Bob) Fassl, a Canadian citizen, as president of the Mining and Rock Excavation Technique business area, with total revenues of more than 3.4 billion Canadian dollars.

Atlas Copco’s underground and surface drilling products, crushing, loading and hauling, and exploration equipment, will fall under the umbrella of Mining and Rock Excavation Technique. Existing divisions for portable compressors and generators, road construction equipment and construction tools will join in the new Construction Technique business area. Both these business areas will create dedicated service divisions. Compressor Technique will focus on stationary equipment for air and gas and related service, while Industrial Technique remains unchanged.

“With more focused business areas, each will be better positioned to develop products and services for specific markets,” says Radomir Maric, general manager of Atlas Copco Canada. “In Canada, this means that our various construction divisions will benefit from new synergies brought about by bringing them all together in one business area, and our mining businesses, also, will be better able to focus on core customer needs.”

**Terex Appoints Waller**

Terex Aerial Work Platforms (AWP), a business segment of Terex Corporation (NYSE: TEX), has announced that Paul Waller has been appointed to the position of Vice President of Sales for the central region. In this role, Waller will lead the central region sales team in supporting customers of Genie and Terex products while achieving company objectives within the territory spanning from Winnipeg, Manitoba to Austin, Texas. The position reports directly to Tom Saxelby, Vice President North American Sales, Terex AWP.

Waller’s responsibilities include the implementation of strategic sales initiatives and the continued development of the central region sales team. Supporting Waller in these objectives is an accomplished and proven field sales team.
**Flexco**

Flexco’s PT Smart Keeps Belts on Track. Mistracking is one of the most costly issues with conveyor belt systems, which is why Flexco developed the PT Smart Belt Trainer. Using proprietary technology, the PT Smart instantly reacts and aligns mistracked belts. It also features pivot-and-tilt technology, strong performance in the toughest wet or dry conditions, and economical, quick installation to minimize downtime and extra costs.

www.flexco.com

**Cat**

New Cat 349E. The new Cat 349E hydraulic excavator features a 396 net horsepower Cat C13 ACERT engine that meets U.S. EPA Tier 4 Interim emissions standards. The new 349E delivers more engine and hydraulic horsepower than its 345D predecessor while consistently averaging 5% improved fuel efficiency in typical applications.

The 349E’s Cat C13 engine, which operates either on ultra-low-sulfur diesel fuel (ULSD) or a blend of ULSD and 20% biodiesel (meeting ASTM 6751 or EN 14214), uses the Cat Clean Emissions Module (CEM) to meet stringent Tier 4 Interim standards. The CEM regeneration system is designed to be transparent to the operator and regenerate when the conditions are optimal with no operator intervention. In automatic mode, the Cat Regeneration System allows the machine to work as normal with no interruptions to the work cycle. The system automatically senses when to regenerate during idle and while the machine is working to maintain high production. The system’s manual mode allows the operator to override the automatic setting.

Among the 349E’s several new fuel-saving features is the Engine Idle Shutdown Setting, which allows selecting how long the machine is permitted to idle before shutting down. Working with this system is a “one touch” idle control feature, which reduces engine speed to low idle with the touch of a button; a second touch or joystick movement puts the engine back into high speed, allowing the machine to go right back to work.

www.cat.com

**Terex**

New Modular Product Line. With more than 100 years in the crushing and screening industry, Terex Minerals Processing Systems has launched a new Modular Product line in response to customer needs.

The new MC1000 is the first module built in the Modular Product Line. The modular product line consists of several pre-designed static and semi-static crushing and screening “plug and play” modules. Modules can be chosen to create the plant required to suit many applications such as aggregates and mining.

“This simple but effective product gives flexibility to our customers to choose ‘ready to work’ modules to create the plant they need for a variety of applications. It also further enhances the Terex MPS product portfolio and will help us to grow in existing markets and enter in to new markets,” said Jason Talbot, Global Product Line Director.

The Terex MC1000 series cone module handles an all-in feed for continuous crushing. Its 1,000-millimetre (40-inch) cone has unrestricted feed opening and a full range of configurations for short and long throw. The all roller bearing design improves crushing efficiency. Additional features include hydraulically adjustable closed side setting, easy manganese changes, and a weather protected control panel with user friendly controls.

Set up time and ease of operation is aided by the simplicity of the modular product range. It is designed to fit and work together interchangeably. The modular product line bolts together on site with little onsite wiring.
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Texas, truck plant.

Under the hood will be a Caterpillar-branded International MaxxForce 11 or 13, rebadged the Cat CT11 and CT13 respectively, with a CT15 to come sometime next year.

Subtle engineering enhancements have been made to make the engines a true Caterpillar, but Blood admitted the engines themselves are not much of a departure from the International base engines.

The engines will come with power ratings ranging from 330 to 550 hp (once the CT15 is brought on-line) and torque ratings from 1,450 to 1,850 lb.-ft.

The new truck is available with a wide range of manual and automated transmissions, but Cat’s own CX31 is a noteworthy option. The fully automatic transmission has six forward speeds and one reverse gear. It has been widely used in other markets since 2004 and offers customers the convenience of one-stop servicing of the entire vehicle through Cat dealers.

Drivers will appreciate excellent maneuverability thanks to the setback front axle as well as great visibility afforded by the sloped hood. The coolant, washer reservoirs and air filters are all accessible from the ground to make everyday maintenance easier for drivers and mechanics and interior surfaces are easy to wipe clean.

Cat has already started taking orders for the CT660 and the first production units were slated to roll off the assembly line in July. Canadian dealers are expected to receive demonstration units by late summer, offering customers their first opportunity to drive the truck.

The company is reluctant to discuss price, except to say it’s a premium product and will be priced accordingly.

Meanwhile, J.F. Kitching & Son is putting its test truck through its paces every day, averaging about 5.5 mpg hauling 37,600 kgs of payload, which is decent for the application, Mike Kitching notes.

One thing is for certain, the truck is getting a lot of attention. Ken Robinson, the everyday driver of the CT660 says he can’t even stop for coffee without other drivers asking for a peek inside.

James Menzies is the Toronto, Ont.-based executive editor of Truck News and Truck West. He wrote this article exclusively for Aggregates & Roadbuilding.

Coming Events

October 18-21, 2011
Beijing International Construction Machinery Exhibition and Seminar (BICES)
Beijing, China
www.e-bices.org/engdefault.aspx

March 13-15, 2012
World of Asphalt
Charlotte, NC
www.worldofconcrete.com

March 29-30, 2012
Atlantic Heavy Equipment Show
Moncton, NB
www.masterpromotions.ca

April 16-21, 2012
Intermat Paris
Paris, France
http://en.intermat.fr/

May 29-June 2, 2012
Conexpo Russia
Moscow, Russia
www.conexporussia.com

June 17-21, 2012
1st International Congress on the Durability of Concrete
Trondheim, Norway
www.icdc2012.com

November 27-30, 2012
Bauma China
Shanghai, China
www.bauma-china.com

April 15-21, 2013
Bauma 2013
Munich, Germany
www.bauma.de

For more information and event listings, please visit www.rocktoroad.com.
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