

# Roadbuilders race to keep up with demand

Canada's roadbuilders have moved from drought to flood as a tsunami of roadbuilding projects materializes

by Trisha Richards

It seems like only yesterday that this industry was struggling to pound home the message on the urgent need for work on this country's transportation infrastructure. That message seems to have gotten through: "To their credit, governments, federal—provincial, and municipal—have really come to understand and realize that this deficit is a huge problem," says Jeff Morrison, director of Government Relations and Public Affairs, Canadian Construction Association (CCA) in Ottawa.

Governments across the country seem to be waking up from a long sleep. Take Newfoundland and Labrador as an example. From 2005 to 2006, \$30 million was allotted to the Provincial Roads Improvement Program. A year later, that figure had doubled to \$60 million. The next cycle (2007 to 2008) will not only see that \$60 million matched, another \$90 million will be invested for other roads projects in other programs in the province.

Newfoundland isn't alone. Within three years, Prince Edward Island has gone from a budget of \$20.5 million to a current \$29.62 million in additional financing. In Ontario, budgets have been increasing in the range of six to 10 per cent annually for the past three years.

## MIXED BLESSINGS

At first glance, these provincial highway budget figures look like a blessing for the roadbuilding industry. But the increased activity comes in the face of a tight labour market—one that will increase the pressure on the industry to find enough skilled tradespeople to get the work done, says the Construction Sector Council (CSC), Ottawa.

This "more money, more problems" syndrome is also being noticed by government transportation agencies. Contractors are becoming "a little more selective in what work they want to take on," notes Chuck McMillan, director, Surface Engineering And Aggregates, Alberta Infrastructure and Transportation (AIT). When road authorities like AIT try to deliver paving programs, they're sometimes faced with significantly higher prices and an occasional scarcity of contractors willing or able to do the work. "There has been a bit of a crunch, and it's probably going to get worse before it gets better," adds McMillan.

Many projects are being cancelled or scaled back, delays are growing and costs for projects are escalating, notes CCA. Concerns about labour shortages have led some roadbuilders to bring in foreign workers, says Morrison. Other roadbuilders



GPS is one technology that may help alleviate labour shortages.

are looking at recruiting workers from other regions of Canada, where volumes of work may not be as great.

“There is a significant number of labourers and qualified equipment operators that have left Nova Scotia for the western provinces. The demand is higher out there,” says Don Maillet, president, Nova Scotia Road Builders Association (NSRBA). He says that Lafarge, where he works, lost a half-dozen employees to the west in the last two years.

This situation is familiar to Rob Bradford, executive director, Ontario Road Builders Association (ORBA). “In Ontario, we’re losing workers to Alberta and we’re losing them to B.C., because there’s better money out there right now,” he adds. “I don’t think we’ve reached the stage yet where guys actually can’t do work because they can’t find workers, but it’s getting very tight.”

### NEW WORKERS

ORBA is developing programs that target students as a possible remedy to the shortage of workers. The organization has designed a program called Infrastructure Opportunities Partnership (IOP) which brings young engineering students and technicians into summer work programs. The program lasts for three consecutive years and the students spend one year being mentored by a contractor, one by a consulting engineer and one by an owner, like the Ministry Of Transportation, explains Bradford. “After their three years in school, they have already had three work terms, and hopefully they will decide they like our business and we get to keep them.”

Schools can be part of the problem. Lack of knowledge, lack of awareness of trades and the reduction of vocational training are among the challenges to recruiting new workers, according to the CSC. The roadbuilding associations are venturing into high schools now, setting up booths at trade fairs and making appearances at career days, says Bradford. “It’s just something we can’t avoid anymore. We’ve got to get the kids at an early age in high school thinking about the potential in the construction industry. I think if we let them go through to grade 11 or 12, we have probably lost them.”

There are some good grassroots programs in British Columbia targeting groups that normally don’t see roadbuilding

as a career, notes Morrison. Joe Wrobel, president and general manager, B.C. Road Builders and Heavy Construction Association (BCRBHCA) says “We encourage women and aboriginals in our industry with a bursary fund that we set up.” The Betty Spalton Trust Fund provides financial support to individuals obtaining an education in fields associated with the roadbuilding and heavy construction industry. Since one of the goals of the fund is to encourage diversity in the industry, preference is given to females and members of minority groups.

### GREY POWER SHORTAGE

During the next 10 years, the industry will need to replace more than 150,000 retiring workers—19 per cent of the current workforce—in addition to hiring new employees, says CCA. Some contractors are looking towards greater use of technology to increase output without increasing staff.

One example can be found at Aecon, one of Canada’s largest public construction and infrastructure development companies. The firm has started to rely on global positioning systems (GPS) to maximize efficiencies. “It’s a new technology for us that is helping us be more productive,” says John Beck, chairman and C.E.O., Aecon, Toronto. This technology can help reduce the workload on site, in terms of workers needed to hold down markers and pins.

Others in the industry are in agreement with Beck. “Skilled operators are hard to find, and they take years and years to train because of the type of work they do, so if you can get GPS-controlled machines that do the work for you, it certainly means that you don’t have to have as many as many of the highly skilled operators on site,” notes Barry Brown, president, Maple Leaf Construction Ltd, Winnipeg.

But besides the growth of GPS technology, the general attitude in the industry is that technology that reduces staff requirements really doesn’t exist or isn’t being developed fast enough. “Our association is looking at ways to increase our pool of heavy equipment operators,” says Glen Lazesk, president, Road Builders and Heavy Construction Association (RBHCA) of Saskatchewan, “but there really isn’t a great deal in the way of technology that is assisting in the worker shortage right now.”

Bradford applauds the industry’s efforts to increase productivity but says it is time to be realistic. “I know these are the areas where roadbuilders are looking to save themselves, but I just don’t see how these things will help in the roadbuilding operation,” he explains. “Roadbuilding takes manual labour and people that can operate equipment. I can’t see any big breakthroughs on the horizon.”

### P3 PLUSES

These days, investments in Canada’s infrastructure often seem to be associated with Public-Private Partnerships (P3s). In a P3 contract, both the government and a private-sector partner share the risk involved with an infrastructure venture. The



concept has proved useful to governments faced with both a need for accelerated roadbuilding and a lack of funds. Now, a government can rely on the private sector to arrange the financing. There is usually some sort of deal that gives the private-sector partner some payback—and usually, in the road sector, that ends up being a toll of some kind.

Generally speaking, roadbuilders across the country see the value of P3 contracts, but they haven't seen much action yet. In Ontario, the 407 highway—most of which was built in only three years under a P3 arrangement—seems to be the model project. "There is no way we could normally build highways that fast. We're dying to get into this stuff. We just don't see a lot happening in Ontario," says Bradford. "The Ontario government has been saying for years that this is the way they want to go, and we have been saying 'OK, so what's stopping you? We're ready.'"

The situation is different in other provinces. "Saskatchewan right now doesn't lend itself to the P3s," says Lazesk. "And it's a little bit difficult to set up a toll road in Saskatchewan where there is a grid every mile, so P3s haven't had much of an affect on us." The same goes, further east. "We don't see much (potential for) P3 projects in Nova Scotia. We're not at that point yet," adds Maillet.

For the time being, it looks like P3s will be most compat-

ible with the much larger projects, like the Sea-to-Sky highway project in B.C. This project will include highway widening and straightening, improved sightlines, additional passing lanes and other design innovation and measures, which in total are estimated at \$600 million.

Another major P3 project is the Trans-Canada Highway in New Brunswick, which will include the design and construction of 98 km of highway, upgrading of 128 km, and maintenance and rehabilitation of 275 km. Construction began in February 2005 and is scheduled for completion by November 2007.

The cost to bid on a P3 contract is a deterrent to some contractors. "It's an expensive proposition to put one of those proposals together and some companies certainly don't want to venture into that world," says Brown. "There's only one winner of a P3 contract... The others spend a lot of time and effort to work on something, and although they usually get some type of remuneration to cover some of the cost of preparing the proposal, it's usually not enough."

#### LIFE CYCLE COSTS

P3 contracts have also caused some roadbuilders to give greater consideration to the materials they use. In some P3 projects, a company may be responsible for maintenance of the infrastructure it builds for decades, and contractors are

## Roadbuilder of the year sees bright future

Now that governments seem ready to address Canada's infrastructure deficit, a bright future awaits those in the industry, says Bob Noseworthy, president of Pennecon Ltd. of St. John's, Nfld. Noseworthy was recognized with the Roadbuilders Award of Excellence by the Canadian Construction Association at its annual general meeting in Puerto Rico.

The award (sponsored by *On-Site* magazine) recognizes leadership and impact within the Canadian roadbuilding community, as reflected by contribution at the national, provincial and local levels.

Noseworthy started his career with Pennecon as general manager and chief estimator in 1979. He became president in 2002, and in that period of time has seen the firm grow from "six or seven" million dollars in revenue to more than \$200 million annually.

He has served as president of the Newfoundland and Labrador Roadbuilders Association three times—in 1985, 1989, and 1994. He sits on the CCA executive committee, has served as chair

of the CCA's Roadbuilders and Heavy Construction Council, and is currently chair of the National Gold Seal Committee.

While the sudden interest in infrastructure has been a boon, it has caused problems. "You can't plan a business in one year or two years. If you don't have the planning done—whether it's with the government or in your own business—if you don't know what things are going to be like for the next five years, it's very difficult to build..."

"I believe that the governments are listening to what we're saying. I just hope that we can get the young people interested in our business. That's the biggest single challenge. If that happens, and I have every belief that it will, we have a very bright future for our business."

Pennecon is a national construction contractor with branches in the energy, concrete and heavy civil construction areas. It has about a thousand employees.

Despite his wide scope of responsibility, Noseworthy was surprised by the award.

"It's pretty humbling for me. I never expected it," he says.



Noseworthy (l.) with *On-Site* editor Jim Barnes

starting to weigh the benefits of asphalt and concrete a lot more carefully.

"There have been a lot of changes in how we look at specifying asphalt," says McMillan. He is the president of Canadian Technical Asphalt Association, which is not a lobbyist group but an organization that shares research and information about new technologies related to asphalt and asphalt mixes. "There have been a lot of agencies working with high-performance asphalt-concrete mixes and high-performance modified asphalt." These products are modified with various materials, like latex modifiers, to help them better resist heavy loading.

Researchers have made environmental improvements with warm-mix asphalt technologies, where asphalt is mixed at much lower temperatures with fewer resulting emissions. "This technology is a long way away from becoming something we would use in highway paving, but in lower traffic roads, it seems to be quite applicable," says McMillan. There are now pavements designed to last 50 years with less maintenance and rehabilitation requirements, he says.

Concrete is still the main choice when it comes to pavement lifespan. "Its rigid nature provides a stable surface that will not rut, washboard or shove and also minimizes the po-

**PROVINCIAL HIGHWAY BUDGETS, \$MILLION**

	NF	PE	QC	MB	BC
<b>2005-06</b>	30	21	1,241	120	1,623
<b>2006-07</b>	60	21	1,300	150	1,773
<b>2007-08</b>	150*	30	1,700	400	1,886

NS—To be announced April 2007

NB—To be announced

ON—To be announced (there have been increases in the range of 6-10% annually for the past three years).

SK—To be announced

AB—To be announced April 2007

\*\$60M, plus \$90M for other roads projects in other programs

*Based on data collected by the Canadian Construction Association*

tential for potholes," says Sylvie Moncion, director of communications, Cement Association of Canada. "This translates into safe highways that require less maintenance with less disruption for the traveling public and commercial truckers."

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When Life Cycle Cost Analysis (LCCA) is used to assess the lifetime costs of a roadway, concrete pavement is, in many cases, less expensive than an asphalt surface of equivalent design, Moncion claims. Additionally, concrete somewhat reduces the cost of lighting requirements on highways. "Concrete pavement reflects light in a diffuse manner, compared to the somewhat mirror-like reflectiveness of asphalt pavement. As a result, a concrete highway requires fewer lights per unit length of pavement to achieve the same level of illumination," says Moncion.

From a contractor's point of view, "it really depends on the application. We would use the one that makes the most sense economically," says Beck. In his opinion, concrete only makes sense for very high-density traffic because it is much more expensive. The use of asphalt might mean more frequent repairs and more frequent repaving and resurfacing, but a lower upfront cost.

"A contractor has to look at the entire package, not only the cost of financing and designing, but in terms of construction, optimizing, so that the total cost at the end of the day is minimized. This may mean more expensive materials up front for less maintenance later, or some balance between the two."

This is a little controversial within the roadbuilding sector, says Morrison, "so let's just say the jury's out on that one." Every contractor knows that price is always the key. But having said that, "I think one thing that's starting to emerge and change a bit is that more owners are now looking at the environmental impact of construction and starting to take that into account in terms of project bids."

"Building with concrete will reduce greenhouse gas emissions over the lifecycle of that road, so that is something to keep in mind," explains Morrison. "Environmental impact is an emerging area, and it's something contractors should be thinking about more as they bid." ♦

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