



The George Street roundabout at Exit 8 off Highway 125, shown here July 2, is expected to be completed this summer. **STEVE WADDEN**

Highway 125 upgrade nears completion

TOM MASON

It may be only 28 kilometres long but Highway 125 is arguably the most important road in Industrial Cape Breton.

The Sydney Bi-Pass, as it is sometimes referred to, takes commuters and travellers from Sydney Mines near the terminus of the Trans-Canada Highway to Grand Lake Road near Glace Bay — serving as the main transportation artery around the outskirts of Sydney as it traces its path around the city.

With about 20,000 vehicles travelling the road every day it's one of the busiest in the province, and lately it's been seeing some significant improvements.

In 2009, the provincial government announced a \$33,550,000 upgrade to Highway 125 — an upgrade that involved twinning the highway for eight kilometres from the four-lane divided portion at Sydney River to the highway's eastern terminus at Grand Lake Road.

The project also included upgrades to access ramps along with new roundabouts at the Highway 125 Grand Lake Road intersection and on George Street at Exit 8.

At the time, the federal government agreed to contribute nearly half the cost of the project — a total of \$15,275,000.

Officially known as Peacekeeper's Way since 2008, the highway was built in a location that has led to a number of engineering chal-



Traffic moves along in Sydney July 2 at the George Street Highway 125 overpass and roundabout. **STEVE WADDEN Staff**

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The Sydney Bi-Pass, as Highway 125 is sometimes referred to, takes commuters and travellers from Sydney Mines near the terminus of the Trans-Canada Highway to Grand Lake Road near Glace Bay — serving as the main transportation artery around the outskirts of Sydney as it traces its path around the city. **CONTRIBUTED/NSRBA**

The Sydney Bi-Pass

Continued from K1

Challenges over the years. At its western end, it skirts the municipal water system for the North Sydney area at Pottle Lake — an ecologically-sensitive location that required building an elaborate system of berms and waterlines to protect the lake from the dangers of potential highway spillage. Jamie Chisholm is a construction manager for the Nova Scotia Department of Transportation and Infrastructure Renewal (NSTIR), overseeing the Eastern District

including Cape Breton Island, Antigonish and Guysborough. He says the build was complicated with a number of design issues cropping up over the last few years, but those issues have been resolved and the completion of the project is in sight. “The sub grade part is done and we’re very close to putting the paving out to tender,” he says. “The biggest challenge for us was keeping the road open and maintaining the flow of traffic during construction. That’s a busy road and you have to plan ahead to keep interruptions to a minimum.” The first stage of twinning the

highway from Balls Creek to Upper North Sydney was completed about 20 years ago. This latest project will leave the entire length of the highway twinned when it’s completed, likely by next year, according to Chisholm. “The tender for the final paving will be called in July, and we plan to complete the section from Sydney River to Exit 8 in the current construction season.” The George Street roundabout at Exit 8 is expected to be completed this summer as well, he says. “We should see the whole project finished by the end of the season next year, including the roundabout on Grand Lake Road.”



This latest project will leave the entire length of Highway 125 twinned when it’s completed, likely by next year. **CONTRIBUTED/NSRBA**

Honorary Member and NSRBA Past President John Chisholm passes away

At press time we learned of the passing of long-time NSRBA member, John ‘Nova’ Chisholm. The following is an excerpt from his obituary which ran in The Chronicle Herald July 7:

John ‘Nova’ Chisholm, legendary entrepreneur, philanthropist, and mover of dirt, passed away peacefully at home on July 4th at the age of 68.

Born in Antigonish on January 5th 1946, to Donald and Margaret I. Chisholm, John co-founded with his father Nova Construction, one of the largest road building companies east of Quebec. When it came to the business of moving dirt and building roads, John was a natural from the start.

The Chisholm clan, whose centuries-old motto was I am fierce with the fierce, was a family of farmers, loggers, and earthmovers. Mechanical competence was considered a necessity of life. So, at age 4, with his father looking on stoically, John Nova learned to drive a tractor.

He bought his first D4 dozer at 17 and won a contract to dig the basement of the Angus L. MacDonald Library at St. Francis Xavier University, happily cutting classes to do so. Later that year, following the assassination of John F. Kennedy, a watershed event for his generation, John quit school for good and founded Nova Construction.

One of the company’s first major jobs was building a large section of highway in Newfoundland. For John, landing in pre-TransCanada Newfoundland was “like getting dropped on the moon.”

But he loved the work, the camaraderie of his crews, creating smooth, straight, well-built roads where there were none before. Most of all, he loved beating the pants off the competition — a passion for which he would never lose his appetite.

In 1975, at age 29, John and his team started construction on what is still considered to be among the largest and most successful industrial projects ever completed in Nova Scotia — the Wreck Cove Hydroelectric Plant.

For the next three decades, John led Nova Construction’s expansion into ever larger and more successful industrial projects: the development of Porcupine Quarry, considered to be among North America’s finest sources of quality aggregate; the construction of the Cobequid Pass, and the establishment of Pioneer Coal, a reclamation mining company with operations throughout Cape Breton and Pictou County. He also played an



John Chisholm 1946 - 2014.

instrumental role in the conception of the Confederation Bridge. His son, Donald, succeeded him as President of Nova Construction in 2006, but John remained active in the business until his death. John played as hard as he worked. A lover of NASCAR racing, he traveled to Tennessee in the mid-1960s to scope out the legendary Bristol Motor Speedway and created a replica, Riverside International Speedway, upon which his son, Donald, races today.

Quiet and old-fashioned, John believed that actions spoke louder than words. While he was well-known for substantial gifts made to a number of organizations including the IWK Children’s Hospital and the Coady International Institute at Saint Francis Xavier University, many people around Antigonish were touched by his everyday kindness and generosity.

In 2011, he was recognized for his significant contributions to Nova Scotia’s economy with an honorary degree from St. FX and, in 2013, he received an honorary degree from Dalhousie University.

And so, 48 years after dropping out of high school, he finally graduated. What an awful pile of dirt it took to make that happen.

John was always incredibly grateful to the many loyal and committed employees of Nova Construction, past and present, who contributed to the success of the Nova group of companies.

John will be mourned and deeply missed by his wife, Anne; his son and daughter-in-law, Donald and Kellie Chisholm; his daughter and son-in-law, Julie Chisholm and Aly Mawji; and the delights of his life, his grandchildren, Emily, Shelby, Nahla, and Kieran.

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Work zone safety

CAROL DOBSON

With school out and holidays beginning, the summer traveling season is here. But that also means that construction crews are also out on our provincial highways upgrading our roads to make them safer for travelling. It's a dangerous job, in hot conditions, dealing with heavy pieces of



The Nova Scotia Road Builders Association and the Department of Transportation and Infrastructure Renewal have joined forces to increase awareness of protecting the lives of construction workers with its Work Zone Safety campaign. 123RF

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NSRBA Hockey Champions 2014



The Atlantic Cats were the 2014 Nova Scotia Road Builders Association Hockey Challenge champions. CONTRIBUTED/NSRBA

Work Zone Safety

Continued from K3

equipment. They don't need tons of metal hurtling in their direction at 100 kilometres per hour.

The Nova Scotia Road Builders Association and the Department of Transportation and Infrastructure Renewal have joined forces to increase awareness of protecting the lives of these construction workers with its Work Zone Safety campaign.

"We've produced ads for radio, and Facebook," said Pam Sullivan, a construction coordinator at Basin Contracting Ltd. "We've also have ads on the screens at Access Nova Scotia and on the Weather Network website so that the average traveler can hear, read, or see our message."

"When you consider that the orange traffic cones are the only barrier between our workers and oncoming vehicles, there's not much protection," she says. "Especially when you're travelling on one of the 100-series highways and even with the speed being reduced to 80 kilometres per hour, you want the workers to feel that they are safe."

The key messages of the campaign are "The Road is Our Workplace," "Warm Weather Means Busier Roads," "Please Slow Down, Proceed with Caution in Construction Places," and "Please Keep Us Safe."

"It's a six week-campaign that started in early June and will run until mid-July," said Steve Smith, a Communications Officer with Nova Scotia Transportation and Infrastructure Renewal. "The road construction season here in Nova Scotia is a short one and we want people to be aware."

In addition to signs indicating



The onus is on the traveling public to watch for construction zones, in both rural and urban settings, use caution, obey signs and flag operators, and use common sense. JOSEPH ROBICHAUD

that there is construction ahead, travelers will also see signs that tell them fines for speeding in a construction zone are doubled. Those who are caught also face demerit points.

"The fines start at \$348.95 for a first offence and can rise to more than \$2,000 if you have two previous convictions," Smith says. Sullivan says Nova Scotia is

looking at other provinces' awareness campaigns.

"We're looking at ways of getting people's attention so that they will slow down," she says. "There's no reason to reinvent the wheel when it comes to these campaigns.

Some of the provinces are using campaigns that really humanize the issue, such as having a small child with their hand out to 'slow

down because my daddy is working here.'

Sullivan says that new signs are in development and she hopes they will be in use during the 2015 construction season.

This year, the Government of Nova Scotia is spending \$235-million to build and improve roads in the province in 2014-15, employing hundreds of workers

across the province in doing this valuable job. So, the onus is on the traveling public to watch for construction zones, in both rural and urban settings, use caution, obey signs and flag operators, and use common sense.

"These people are working to make our roads better," Smith says. "So slow down and give them a chance to do their job."

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A view of the Cogswell Interchange in Halifax from Cogswell towers. HERALD FILE

The Cogswell Interchange

More than 40 years after it opened, a plan is in the works to remove the Cogswell Interchange and replace it with more standard roadways

TOM MASON

Gordon Stephenson had a profound effect on downtown Halifax for more than a generation.

The University of Toronto professor completed a study on the city's core in 1956; a study that was used as the blueprint for the next decade of urban renewal in Halifax.

Over that 10-year period more than a dozen city blocks were levelled to make way for new high-rise buildings and a large traffic structure called the Cogswell Interchange was built.

The Interchange was designed to connect to a six-lane highway along the waterfront that would have been called Harbour Drive.

But opposition to the project mobilized and the highway was never built. The Cogswell Interchange remained as one of Halifax's biggest white elephants.

Now more than 40 years after it opened, a plan is in the works to remove the Interchange and re-

Continued on K6



The view of Barrington Street toward the Cogswell Interchange. HERALD FILE

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Cogswell Street Interchange funnels traffic into downtown Halifax. Constructed more than 40 years ago to connect with a harbour highway that never happened, many residents feel the Interchange is now unnecessary. **HERALD FILE**

Cogswell Interchange

Continued from K5

place it with more standard roadways. The demolition will also free up about 10 acres of prime downtown land for development.

It's an opportunity that cities don't get very often. A series of public meetings have already taken place and a plan has been developed by the Dartmouth urban planning firm Ekistics Planning & Design — a plan that includes major green spaces, multi-use trails stretching north along Barrington Street and a large open plaza at the end of the Granville Mall.

It's an impressive vision, one that also gives careful consideration the flow of traffic along the Barrington Corridor — a major access point for the downtown core with about 90,000 vehicle trips through the area every day.

Peter Bigelow is manager of real property planning for the Halifax Regional Municipality. He says once the Cogswell Interchange is gone, the 16-acre parcel of real

“There is a lot of good development slated for downtown right now. We don't want to draw good development away from other parts of downtown in favour of the Cogswell area.”

Peter Bigelow
HRM manager of real property planning

estate that's left will be divided three ways. “About six acres will be used for roads and traffic flow, with four acres for public realm parks and public open spaces. The other six acres will be made available to private developers.”

Bigelow says that a number of developers have already expressed interest in the land, but HRM is taking a conservative approach, with about an eight to 13-year uptake for development.

“There is a lot of good development slated for downtown right now. We don't want to draw good development away from other parts of downtown in favour of the Cogswell area.”

Preliminary plans call for a roundabout to replace the interchange and connect Cogswell Street to Barrington, Hollis and Lower Water Streets. But there are challenges, including what to do with the intersection of Barrington and Cornwallis.

“It's likely that that will be kept as a standard intersection,” says Bigelow. Also, traffic backups from

the MacDonald Bridge could disrupt the flow of roundabouts in the area. “Roundabouts don't work very well when there's a traffic jam in front of them,” he says.

To make the new traffic corridor work, traffic designers will likely have to think in a holistic manner, according to Bigelow.

“The Cogswell Interchange works now like a funnel concentrating traffic into the downtown core. What we need to do is to increase the porosity of that funnel. We've done traffic flow studies that suggest that a lot of drivers just drive 70 kilometres an hour down Barrington Street until they hit traffic and come to a stop at the Interchange. That's when they decide

what they're going to do next. We have to open up new corridors and new routes into downtown so that they make their decision further out.”

A new roundabout planned for the five-way intersection at Cogswell and North Park is part of that plan. Bigelow says finding ways to turn underutilized Brunswick Street into a new traffic corridor will also help.

A detailed design plan is now in the works, one that will be presented to HRM Council when it is 60 per cent complete.

“That will be a go or no-go point,” says Bigelow. “If council is happy with the plan and with the projected costs we will proceed to the next step. If not, we'll revise it.”

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Some road builders are turning down the heat

TOM MASON

Sometimes it's better to turn down the heat. A recently developed asphalt spreading technique uses technological improvements that allows asphalt to be produced at a temperature 20 degrees to 40 degrees C lower than traditional hot mix asphalt.

Known as warm-mix asphalt, this new technology is starting to be used on highways in Nova Scotia.

Warm-mix asphalt works by a number of methods. In some cases chemical additives may be used that promote aggregate wetting at a lower mixing temperature.

Asphalt emulsions, foaming techniques, synthetic binders, wax, crushed zeolite minerals, even concentrations of water can also be used. The result is an asphalt that is produced with less energy, creating less greenhouse gases, fumes and odours at the asphalt plant and at the paving site.

It's easier on the environment and creates better working conditions for road builders at the same time.

The warm mix can also be spread earlier or later in the season than traditional hot mix; an advantage that could extend the road building season in Nova Scotia.

There are a few drawbacks as well including an increased risk of moisture susceptibility and rutting susceptibility, depending on the type of warm mix technology being used and other mix design properties. Road builders around the



Warm-mix asphalt is produced with less energy, creating less greenhouse gases, fumes and odours at the asphalt plant and paving site. **123RF**

world began developing warm asphalt techniques on the heels of the 1992 United Nations discussions on the environment and the resulting 1997 Kyoto Accord.

The first application on a public road took place in Germany in 1999 using a system called Asphamin zeolite system.

The first Canadian trials took place in 2005 in Alberta, Ontario and Quebec.

In 2007, extensive trials were carried out in five provinces using seven different warm mix processes.

Adam Marlin is a pavement management engineer with the Nova Scotia Department of Transportation and Infrastructure Renewal (NSTIR). He says a number of warm mix asphalt techniques are starting to be used in the province.

Warm mix was applied on sections of Trunk 2, Route 212 and on Margeson Drive as part of NSTIR projects through 2009, 2010 and 2011, and on a section of Kingston Crescent in 2008 and Long Lake Drive Extension in 2009 as part of Halifax Regional Municipality projects.

Marlin says that it's up to individual road builders to decide whether they want to use warm mix asphalt or stick with traditional hot mix techniques.

"NSTIR has an approved list of processes and additives that can be used to produce warm mix asphalt," he says. "Contractors are permitted to use these additives and processes at their own discretion and many do. NSTIR currently has no plans to begin mandating the use of WMA as the preference is to let the contractors decide how best to approach their individual projects."

There is a cost to purchasing additives to allow for the production of warm-mix asphalt, according to Marlin; costs that can vary quite a bit and can affect the time and return on investment.

However, the majority of warm mix technologies don't require any new equipment and have a cost only for the additive used while in production.

"The costs can be mitigated if a significant reduction in production temperatures can be achieved which results in a reduction in fuel consumption," he says.



The H.W.L. Doane Trophy

The H.W.L. Doane Trophy is awarded to the company with the greatest improvement in safety performance as rated by WCB and NSCSA. The 2013 winner was Wilcraft Concrete Services. The award was presented to Dave Wilson (Wilcraft) by Pam Sullivan, NSRBA Vice President (Basin Contracting). **CONTRIBUTED/NSRBA**

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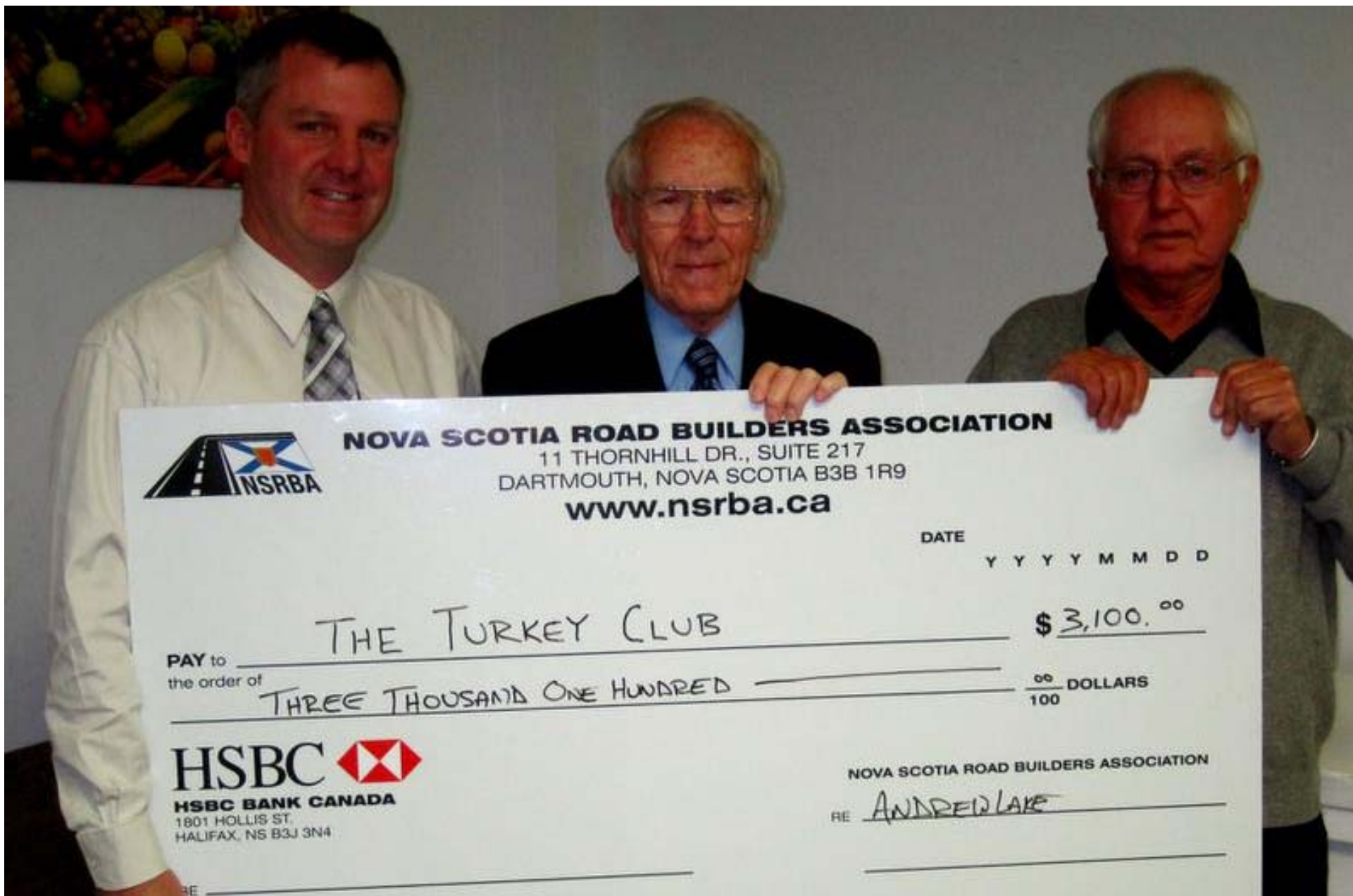
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The NSRBA is a proud sponsor of the Turkey Club, a volunteer group dedicated to raising funds so less fortunate families can enjoy a Christmas dinner and a brighter holiday season. For more information please visit www.turkeyclub.org. Left to right: 2013 NSRBA President Andrew Lake, Mel Boutillier, (former) Chair of the Turkey Club, and Ron Legere, Past President of the NSRBA and chief organizer of the annual golf and curling events. **CONTRIBUTED/NSRBA**

N.S. Road Builders busy supporting local charities

CAROL DOBSON

The members of the Nova Scotia Road Builders Association are firm believers in supporting their community.

They hold two major fundraising events a year — an auction at the annual general meeting in January

and a golf tournament in the summer. Over the past eight years the association has raised approximately \$240,000 for local charities.

“Our members like to give back,” Guy Kendziora, of McAsphalt Industries says. “We solicit the members for donations to the auction and they give readily.”

Members help in other ways.

Kendziora says one of the member companies is Thompson’s Moving and they’ve assisted in transporting donations from Kendziora’s office to the Westin Hotel, a major and welcome time saver.

Since the auctions started in 2008, the format has included a mixture

of silent and live auctions. Some years, as many as 110 items were available for auction but the organizers have come up with a format that sees fewer items for the organizers to collect, deliver to the venue at the Westin Hotel, and display.

The items up for auction have included trips to hockey games in

Montreal and golf excursions.

“The president of the Road Builders Association picks the charity that will benefit from the auction,” Kendziora’s co-chair BJ Harvey, of CAT Rentals, says. “One year the charity was the Children’s Wish

Continued on K9

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NSRBA charities

Continued from K8

Foundation. Comedian Jimmy Flynn got involved with that one as it's a charity he supports. We were able to turn over a cheque for \$80 thousand to the foundation and grant eight wishes. It was a most amazing night."

The one wish she personally remembers was a young man who requested a new TV and appliances for his mother. The foundation took him to a local appliance dealer and he turned over the entire amount to his mum so she could go shopping.

BJ Harvey admits she enjoys organizing the event, acting as its 'Vanna' and encouraging the members to bid more.

"Sometimes the charities we select are small and they aren't used to receiving large donations," she says. "It was wonderful to see the look on one recipient's face when we presented her with a cheque for \$34,000."

When golfers get together each July for the NSRBA annual golf tournament in Truro, they are raising money for the Turkey Club. Ron Legere, a former NSRBA president, is the person behind this initiative.

"I was playing golf with the late Jack Cruikshank and three others from the club and they told me about the work of the Club, which raises money all year round so people can have a Christmas dinner," Legere says.

"They give out at least 1,000 turkey dinners with all the fixings every year. Since his death, it's been operated out of the Parker Street Food Bank. It's a worthwhile charity, run by volunteers and less than five per cent of the money raised goes to overhead."

He says the tournament, which is being held this year on July 10, has a limit of 144 golfers — NSRBA members and their guests stand to raise between \$3,000 and \$7,000 for the Turkey Club.

Another charity the NSRBA supports is the TAPA Cat Rescue; it's an organization in the Metro Halifax area run by Angela Miller, with limited resources, that looks after stray and feral felines.

In Legere's case, the idea to support TAPA came from personal experience.



NSRBA makes a donation to the TAPA Cat Rescue Society. Left to right: NSRBA Past President Ron Legere, Angela Miller (TAPA Cat Rescue Society), and 2013 NSRBA President Andrew Lake. CONTRIBUTED/NSRBA



The Third Place Transition House was the charity selected for the 2014 AGM silent auction donation of \$34,200. Left to right: Scott Hoeg, member of the NSRBA and past president of Third Place Transition House; association past president Andrew Lake; associate member Jennie Appleby of Aggregate Equipment Ltd.; associate member B.J. Harvey of Atlantic Cat and Cat Rentals; Third Place executive director Sandra Falle; NSRBA executive director Grant Feltmate and association president Greg MacDonald. CONTRIBUTED/NSRBA

"Sometimes the charities we select are small and they aren't used to receiving large donations. It was wonderful to see the look on one recipient's face when we presented her with a cheque for \$34,000."

BJ Harvey,
CAT Rentals

"We had a mother cat have a litter of kittens in our backyard," he says. "We caught the kittens and turned them over to TAPA so they could be spayed and neutered and placed for sale in pet stores. We were also able to capture the mum, discovered she could be tamed, and she also found a forever home."

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The Asphalt Laydown Technician Program gives participants the skills and knowledge needed to become asphalt paving/laydown technicians. The program was developed in-house by the Nova Scotia Road Builders Association to address a need for more education in the road-building industry. CONTRIBUTED/NSRBA

Asphalt Technician Program now in its third year

TOM MASON

A new program being offered to Nova Scotia road builders is helping to improve standards within the industry according to the executive director of the Nova Scotia Road Builders Association.

Grant Feltmate says the Asphalt Laydown Technician Program gives participants the skills and knowledge needed to become asphalt paving/laydown technicians.

The program was developed in-house by the Road Builders Association to address a need for more education in the road-building industry.

Although the association offers a number of educational courses including safety training courses, this type of technical program wasn't available anywhere in the province, says Feltmate.

"We looked at the kind of programs we were offering and asked ourselves if there was an education piece that was missing. We came to the conclusion that this was the way to go."

The intensive, four-week program involves about 30 hours of classroom training per week for the first three weeks, followed by a week of hands-on training with equipment. "That's the part of it that most participants really respond well to," says Feltmate. "They get to operate all the equipment with professional instructors. After that they go back to

the job and get signed off for certification." Every successful graduate receives a certification from the Canadian Construction Association's Gold Seal Program.

Feltmate says that most of the course participants are expected to already have one or two years of experience in the road building business but the course has also attracted a few students with a much deeper knowledge of the industry.

"We've had guys with 20-plus years in the road building business who still find it worthwhile. It's been a real benefit to be able to attract those experienced people to take part. That sharing of experience is a big plus for the course. Everyone learns from everyone else."

Keeping things interesting and enjoyable over the month-long program has been challenging, but Feltmate says the course developers and instructors have done an excellent job.

"You have to remember that all the students who take this course are people who already work in the paving industry," he says.

"They're professionals who already understand something about the process. When you put them in a classroom they're not always enthusiastic about the idea; but most of the people who take the course end up having a lot of fun. That says a lot about the quality of the instructor and the quality of the course."



The intensive, four-week Asphalt Laydown Technician Program involves about 30 hours of classroom training per week for the first three weeks, followed by a week of hands-on training with equipment. HERALD FILE

The Asphalt Laydown Technician Program is now in its third year, with this year's offering the most well-attended so far. A change in venue may have been responsible for that. "The interesting thing is that we held the course in Dartmouth for the first two years and got a small number of participants, but when we moved it to Truro this year it really

took off. We had seven contractors participate, with a total of 15 participants in the classroom."

Feltmate believes the move to Truro probably made it more convenient for participants in areas such as northern Nova Scotia who may have found Dartmouth out of the way.

"We moved to Truro thinking it would attract people from other parts of the province and it worked," he says. "Our intention is to offer the course in Truro again next year, but we may also offer it in other parts of the province in years to come."

The Road Builders Association is following up on the success of the Asphalt Laydown Technician Program by developing other educational programs along the same line, including a new course on the fundamentals of flatwork concrete developed in cooperation with the Atlantic Concrete Association.

"We're hoping the word will spread to our members from folks who have successfully completed the course and enjoyed it," says Feltmate.

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Burnside Expressway project enters design stage

TOM MASON

In March, 2012, HRM Regional Council voted to allow the sale of 168 acres of municipal-owned land to the province — a move that singled the start of a project that has been on HRM's wish list for more than two decades.

When the Burnside Expressway is completed sometime around 2018, the new road will have a fundamental impact on traffic patterns from Sackville to Cole Harbour and beyond.

The expressway will be the final link in a new transportation artery stretching from Musquodoboit Harbour to Sackville.

The new road will allow the rapid flow of traffic between Burnside and Sackville and will extend Highway 107 from its current terminus at Burnside Drive through to Highway 102.

With traffic volumes on Magazine Hill topping 40,000 vehicles per day, there has long been a demand for a new route connecting Sackville and Burnside.

While no ground has been broken yet, the planning and a acquisition stages of the project are well underway according to Nova Scotia Department of Transportation and Infrastructure spokesperson Steve Smith.

"The department is currently working with landowners — particularly the Federal government — to finalize land acquisition," says Smith. "The design is being worked on and the project is expected to start in 2014-15."

Completion of the project is expected to take three years.

Phase one of the project will extend Burnside Drive in Burnside to connect with Duke Street in Bedford, using the Glendale Avenue / Duke Street Interchange to connect with Highway 102.

That will create direct freeway access extending from Highway 107 from Musquodoboit Harbour to the 102 to the Annapolis Valley.

In the short term Duke Street will provide the connection between the Burnside Expressway and Highway 102, but according to the a 2011 report on the project commissioned by the Nova Scotia Department of Transportation and Infrastructure, the two highways will likely be directly connected at some future date.

With major new residential development taking place in a number of areas including Hammonds Plains, Middle Sackville and Bedford West — areas that will see an increase in commuter traffic to Burnside and Dartmouth over the next decade — the new highway is critical piece of infrastructure for the Halifax Regional Municipality, according to the NSTIR report.

The report says that commercial development at Rocky Lake and the Sackville Business Park is also creating new traffic demands, and predicts that substantial growth will continue in those areas for another 10 to 20 years.

In addition to diverting traffic away from Magazine Hill and Dartmouth Road, the new highway will also provide heavy trucks with easy access from Burnside to the provincial corridor at Highway 102.



The 62nd Curling Bonspiel Winners were the team of Phil Sullivan, pictured left (AMEC), Derek Boutlier (Dexter Construction), Keith Morrell (Dexter Construction), and Mark Macgillivray (Aggregate Equipment). Trophy Presentation by Nova Scotia Premier, Stephen MacNeil (middle). CONTRIBUTED/NSRBA



The 62nd Curling Bonspiel Runners-up were the team of: Lennie Gallant (Basin Contracting), Sue McGregor (IronPlanet), John Flemming (Ocean Contractors), and Richard Munroe (Basin Contracting). Trophy Presentation by the Honorable Jamie Baillie. CONTRIBUTED/NSRBA

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Road builders providing access to wind farms

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In fact, Les Souetes that come roaring over the mountain in Cheticamp are among the highest winds in the world.

No wonder we're seeing more and more wind turbines being erected across the province.

According to the Canadian Wind Energy Association, there are 160 wind turbines currently in existence in Nova Scotia.

Currently, Nova Scotia Power estimates that 10 per cent of the electricity produced in this province comes from wind power.

When you look at a map of the province showing where wind turbines are located, you can appreciate the challenges engineers have in building the access roads required to build and maintain the turbines.

"Our topography does create some challenges, especially when the wind turbine site is two to three miles from the main road," Ron Hiltz, a senior project manager at WSP, says.

"In Nova Scotia, these wind farms can go anywhere, such as the bog land of the Tantramar Marshes outside of Amherst, which has soft soil and unique design challenges. Then, on the other side of things are sites which have a granite bed, which form its own set of challenges. While you do wish for a nice, solid bottom, that may involve getting rid of a lot of rock. All of these situations are do-able, but they bring on their own set of challenges."

"There also has to be a great deal of consideration when it



Nova Scotia's road builders have been meeting the challenges of building access roads required to build and maintain wind turbines. CONTRIBUTED/NSRBA

comes to curves and grades for bringing in these long loads," Hiltz says. "For example, the trucks that bring the blades in are 200 feet long. As a result, the curvature requirements are quite stringent."

The roads being built in order to construct and operate the turbines are not the typical woods roads that are used to access remote parts of the province, so loved by snowmobilers and ATVs.

The engineering that goes into their construction is akin to the engineering for a major highway. The roads being used when the

equipment is being transported must be able to withstand heavy loads. Vehicles commonly used on these roads include semi-trailers and flatbed trucks that carry the cranes, machine house components, the tower, and the blades. Not only are these roads constructed so that the wind turbines can be erected but so that they are accessible for maintenance going forward.

"The blades on the wind turbines can be up to 165 feet long each," he says. "Therefore to take them around a 90-degree turn takes quite a long turning radius

to make the turn happen. It's similar to building a major highway."

He says that engineers use specific turn mapping software that can simulate the outside envelope of the truck when they begin to plan these roads.

Some of the other issues that are involved with building these access roads include government regulations about wetlands and water courses. He says that environmental assessments are a key part of the road construction process.

"There's another wave of wind

farm construction underway in the province," Hiltz says. "Some have between one and three turbines, while others are larger and there is another round that has been approved by Nova Scotia Power for next year. I know of five sites that are being built during this construction season and there is one large industrial wind farm that is under construction right now. In the short term, I see this trend continuing, but much depends on the capacity to use the power that these wind turbines can feed into the system."

A quarry lifecycle

RHETT THOMPSON

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In addition to geological and economic factors, locating a quarry requires careful consideration of the surrounding community and environment.

An Industrial Approval is required to operate a quarry of less than four hectares whereas an Environmental Assessment Approval is also required for quarries in excess of four hectares.

Before granting an approval, Nova Scotia Environment carries out a



In accordance with environmental regulations and upon exhaustion of reserves, a quarry is rehabilitated to maximize the future usability of the area, which may include recreational, commercial or residential use. CONTRIBUTED/NSRBA

careful review of a quarry application to ensure a proposed development will not significantly impact the immediate environment.

Part of the approval process requires a proponent undertake public consultation to solicit public

feedback regarding a proposal.

Terms and Conditions are put into all approvals to ensure the surrounding community and environment will be adequately protected.

These conditions may include monitoring requirements, separa-

tion distances, regular compliance reports, rehabilitation requirements, and site specific conditions.

Quarries are audited on a regular basis by Nova Scotia Environment Inspectors to ensure compliance with approvals.

In accordance with environmental regulations and upon exhaustion of reserves, a quarry is rehabilitated to maximize the future usability of the area, which may include recreational, commercial or residential use.

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The Rattle Brook Bridge was built using the revolutionary, Nova-Scotia-invented glass fibre reinforced plastic mesh instead of the more traditional steel rebar. CONTRIBUTED/NSRBA

GFRP's the new standard in bridge design

TOM MASON

Most people travelling west from Cape Breton on Highway 104 are unaware that they are driving over a piece of highway history.

What appears to be a simple highway bridge — the westbound span of the Salmon River Bridge near Truro — was actually the first concrete bridge in the world to be built without steel; a process that was once as unthinkable as building a house without nails. Developed at the Technical University of Nova Scotia (now part of Dalhousie University) under the leadership of Dr. Aftab Mufti, the revolutionary bridge used a plastic mesh instead of the more traditional steel rebar to give the structure its strength.

It's probably no surprise the technique was developed and tested in Nova Scotia. The province has one of the harshest climates in North America for steel-reinforced concrete structures.

A corrosive combination of salty atmosphere and generous applications of road salt cause steel rebar to rust internally over time — a process that can fatally weaken concrete bridges and overpasses, leading to costly repairs and replacements.

Two decades after the Salmon River Bridge was opened, glass fibre reinforced plastic (GFRP) has become commonplace in concrete structures around the world.

The reinforced polymer mesh is strong and lightweight, non-corrosive and relatively inexpensive. It's also starting to come into wide use in the province where it was first developed.

"To date this year, we have tendered four projects with GFRP reinforcing in the bridge deck and barrier walls," says Ryan Swinemar, senior bridge engineer with the Nova Scotia Department of Transportation and Infrastructure Renewal's structural engineering department.

"We will have possibly two more tenders using GFRP before the end of the year."

Swinemar says that the Department of Transportation and Infrastructure Renewal (NSTIR) has been making GFRP a standard request in recent concrete bridge and wall tenders.

"This is how TIR intends to proceed with deck and barrier reinforcing in future designs," he says.

The new reinforcing material comes with a number of advantages over steel; most importantly, a longer lifespan.

"Steel reinforcing is subject to corrosion which results in a shorter life for our structures," says Swinemar. "GFRP will allow for a longer lifespan for our bridges since it is not subject to corrosion."

Longevity isn't the only advant-



The reinforced polymer mesh is strong and lightweight, non-corrosive and relatively inexpensive. It's also starting to come into wide use in the province where it was first developed. CONTRIBUTED/NSRBA

"Steel reinforcing is subject to corrosion which results in a shorter life for our structures. GFRP will allow for a longer lifespan for our bridges since it is not subject to corrosion."

Ryan Swinemar

age, according to Swinemar.

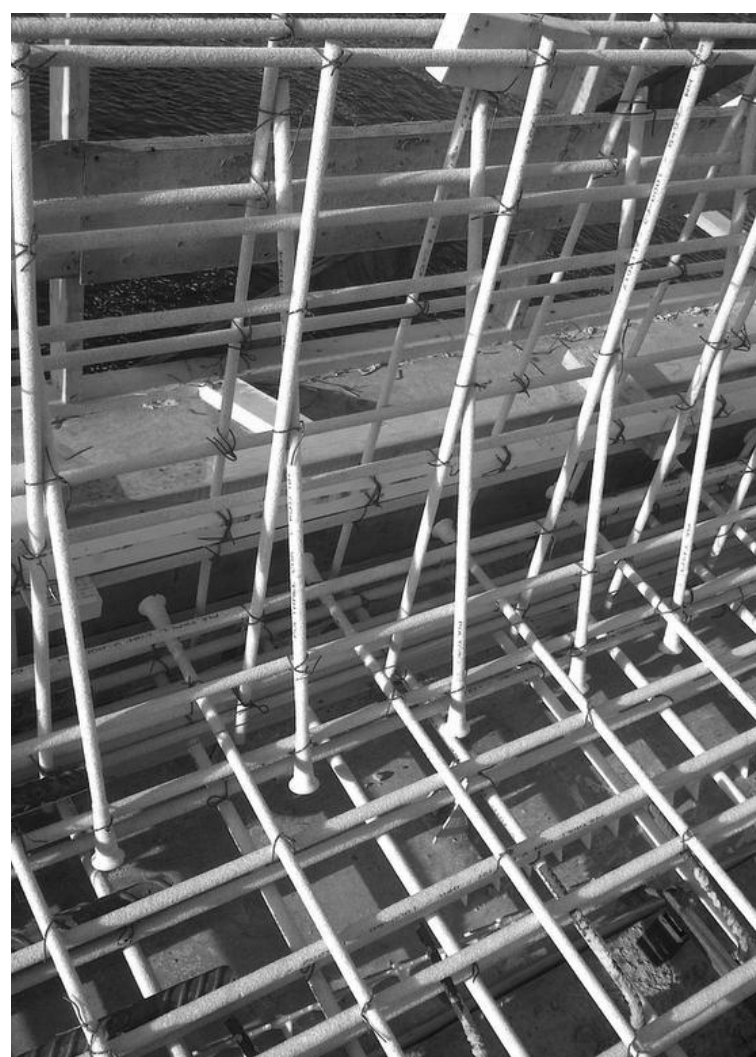
"Because GFRP is significantly lighter than rebar, structures are cheaper to build. "GFRP allows for thinner decks due to the lower cover requirements compared to steel reinforcing," he says.

"That results in lower dead loads in the overall bridge design which reduces construction costs. GFRP is also a lighter material than steel reinforcing so the labour costs should be less than steel reinforcing once the contractors become familiar with its use."

Swinemar says that GFRP has quickly become the standard across Canada, and many contractors in Nova Scotia are already comfortable with its use.

"The design of GFRP reinforcing is now covered in Canadian Highway Bridge Design Code which NSTIR uses for our Bridge designs. This simplifies the design process since now there is a code that governs the design. Currently we are only using GFRP reinforcing in our deck and barriers designs."

Theoretically, a GFRP-reinforced bridge could last more than 100 years before it needs repairs. With about 4,300 provincially-owned bridges spread out across Nova Scotia, the cost savings and the innovative made-in-Nova Scotia solution could be significant.



Theoretically, a GFRP-reinforced bridge could last more than 100 years before it needs repairs. CONTRIBUTED/NSRBA

The cycles of road construction

CAROL DOBSON

Even though Nova Scotia is Canada's second smallest province, there are 23,000 kilometres of roads and highways and 4,100 bridges that need to be maintained every year.

It's a major industry that creates an estimated 5,000 direct and 2,500 indirect positions every year.

In order to undertake this work, the provincial government operates on five-year road construction cycles.

The plan identifies capital maintenance and infrastructure work, major highway and road projects, repaving, and major bridge replacements.

"Every year there is a new five-year plan that looks ahead at projects that will be coming on stream in the years ahead," says Steve Smith, a communications manager with the Department of Transportation and Infrastructure Renewal.

"It's a recirculating program that allows companies in the industry to know what projects are ahead so they can plan their activities (see their website at http://novascotia.ca/tran/highways/5yearplan/why5year14_15.asp to see the projects that are in progress or in the planning stages).

According to the TIR website, \$235 million has been allocated in capital funding for more than 120 upcoming highway improvement projects in the 2014-15 fiscal year.

Additional funds will also be allocated for maintenance. Almost \$210 million of this comes from provincial coffers, another \$25.5 million from the federal government, while municipalities will be paying \$1 million to cost share projects in their respective areas.

Some of this year's projects include a new roundabout at the Highway 102-Waverley Road intersection, expansion of the 100 series highway on Highway 104 in Antigonish from Beech Hill Road to Taylor Road and from Taylor Road to the Pag'tnkek Interchange and Monastery. This will make this busy stretch of highway less congested and safer for travelers.

There will also be a new alignment on Highway 103 between Broad River and Port Joli and multi-year construction on the Ingrauport Exchange and the government is in discussions with the federal government to extend the twinning of Highway 103 and



The Indian Sluice Bridge construction is one of several major projects underway right now in Nova Scotia. CONTRIBUTED/NSRBA

to complete the twinning of Highway 101.

Phase One of the long awaited Burnside collector is on the books for the 2015-16 fiscal year.

Because road construction and maintenance is a never ending project, repaving will be undertaken on the 100-series highways in the Halifax Regional Municipality, the Cape Breton Regional Municipality, Pictou, Cumberland, Yarmouth, Annapolis, Richmond, Kings, and Victoria Counties.

Those living in Sydney are familiar with one of the major bridge construction projects that will continue this year, the replacement of the Sydney River Bridge as well as the twinning of Highway 125 in the vicinity of Sydney River.

As well, anyone travelling on Route 102 has seen the work being done to rebuild the Shubenacadie Bridges. Work will also

continue on the Highway 102 overpass at Joe Howe Drive in Halifax.

In this province, highways are funded through a number of sources collected by the provincial government including gas taxes, motor vehicle registration, and other provincial funding as well as federal funding made available via the Building Canada Plan.

The provincial government is responsible for maintaining 90 per cent or 23,000 kilometres of road in the province. Maintaining roads is a costly investment by the government as it costs more than \$300,000 to repave a kilometre of highway, \$500,000-\$750,000 per kilometre to upgrade a trunk highway, and \$3,000,000 per kilometre to twin a major 100-series highway.

The annual payroll for Nova Scotians employed in road building is approximately \$300 million.



Indian Sluice is the channel between Sluice Point and Surette's Island in Yarmouth County. The existing bridge was installed in 1909. It will soon be replaced with a concrete, two-lane bridge. CONTRIBUTED/NSRBA

For instance, TIR estimates that a typical \$2,000,000 paving contract generates about 60 direct jobs and about \$200,000 worth of business for the trucking industry

and spin-off benefits for local businesses that provide construction materials, metalwork/welding, engineering, electrical and hazard removal.



The 2014 Hockey Challenge Trophy presented to the Honorable Geoff MacLellan (The Atlantic Cats) by HRM Mayor, Mike Savage. CONTRIBUTED/NSRBA



The NSUPA Softball Tournament Winners. CONTRIBUTED/NSRBA

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NSRBA's new member companies for 2014

Beaver Bank Resources (BBR)

BBR is a supplier of sand, aggregates and topsoil. Operating primarily in Atlantic Canada, BBR produces aggregates for industrial, commercial and residential markets.

Drive Products

Drive Products provides a complete source of truck mounted equipment and specializes in systems engineering, installation, and repair services.

Atlantic Oilfield & Industrial Supply

Atlantic Oilfield & Industrial Supply provides distribution of Irving oil lubricants and bulk delivery service.

Trout River Industries

Trout River Industries specializes in conveyor trailers (live bottom and shuttle floor trailers).

East Coast International

East Coast International Trucks Inc. is an international truck dealership with locations in Moncton, Dartmouth, Saint John and Truro; it recently welcomed David Lockhart as the new owner. While the company continues with the same name, it begins a new, long-haul journey to build customer loyalty with the mantra: "mutual success is mandatory."



WCB Shield Award

The WCB Shield Award was presented to Calvin Flight (Industrial Cold Milling) by Stuart MacLean, CEO of Workers Compensation Board.



Golf Tournament Champs

The winners of the 2013 11th Annual NSRBA Golf Tournament held at the Truro Golf Club was the team from Basin Contracting. Pictured are (from left): Pam Sullivan, Curtis Isenor, Jeff Sullivan and Brad Scott. This year's tournament was scheduled for July 10 at the Truro Golf Club.



62nd Curling Bonspiel Winners

The winning team (from left): Phil Sullivan (AMEC), Keith Morrell (Dexter Construction), Derek Boutlier (Dexter Construction) and Mark MacGillivray (Aggregate Equipment).



Road workers fix pot holes on Barrington Street in Halifax. CONTRIBUTED/NSRBA

Potholes keep road workers busy

CAROL DOBSON

One of the surest signs of spring in this province isn't the appearance of Shubenacadie Sam, it's the appearance of potholes.

They are formed as the asphalt covering our streets ages. As asphalt ages, it becomes more porous, allowing rain and snow to penetrate underneath its surface.

As this water freezes, the pavement warps; when it melts, it collapses to form a pothole, which grows in size depending on the amount of traffic passing over it.

"For every pothole that is reported to us, there are probably three more," says Don Pellerine, Halifax's superintendent of streets and sidewalks. "The ones in the outlying areas tend not to get reported as much. That's probably because people are traveling on that street on a regular basis and learn to avoid the potholes. Ones on high traffic streets, like Sackville Drive, Portland Street and Barrington Street get reported first."

The potholes in high-traffic areas also tend to be fixed first. This past winter was problematic because the pothole season began in late December rather than the traditional March start.

There are two types of pothole patching — the emergency patching done in the winter time and the summer-fall patching, when the weather conditions are better. Crews can't patch the potholes unless they are dry.

Also, most local asphalt plants are closed during the winter and don't reopen until late April (weather permitting).

One quick fix during the winter season is to use cold patching, which is a technique that uses cold asphalt that is heated with a portable torch to keep it pliable.

This can be used under all weather conditions but is at risk of being a temporary measure thanks to traffic, snow removal equipment and water under the roadbed causing it to move. As a result, hot patching, using new or recycled hot asphalt is a better technique.

"In the winter we use a hot asphalt mini-mixer that creates hot asphalt on the back of a trailer," Pellerine says. "The demand was so great that we added a second mini-mixer to the Dartmouth side of the harbour. Beginning on February 4, we were out patching potholes day and night for four weekends straight."

As of early April, the municipality reported that more than 6,000 potholes had been filled since the beginning of the year,



Weather and air temperature are big factors in proper pot-hole repair. CONTRIBUTED/NSRBA

at a cost of \$500,000. The city does have a policy whereby drivers who believe their car was damaged by a pothole can file a claim with the regional municipality.

However the onus is to prove that HRM was negligent — that it knew about the pothole and failed to inspect or fix it within prescribed service periods.

During the last fiscal year of 2013-14, which ended on March 31, 309 pothole claims were received, with 138 being closed and six being paid.

Now that the summer months are here, the attention will turn to more permanent repairs. Pellerine and his crew, as well as the private contractors hired by the municipality, are hoping for a few months of fine weather to get the job done as the effectiveness of the repair jobs is affected by air temperature, moisture, wind speed, the temperature of the pavement being repaired, as well as the temperature of the asphalt being applied to cover the potholes.

According to the HRM website, approximately 2,700 tons of asphalt will be used during the summer/fall season (which traditionally ends Oct. 31) to repair streets, sidewalks and curbs.

"In the summer months, we can dig out the holes and 'permanently' fix them using the proper materials," he says. "For example, we'll be working on some of the more heavily-traveled streets like Bayers Road and Quinpool Road. It's a never-ending process."

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