



ONE

THE MAGAZINE OF AECON GROUP INC.
WINTER 2019, VOLUME 6

LAYING THE TRACKS FOR A NEW MONTREAL
Montreal's Réseau express
métropolitain (REM) Project

FULL THROTTLE FORWARD
Bermuda Airport
Redevelopment Project

EXPERIENCE ON THE LINE
Enbridge Line 3
Replacement Project

IN TRANSIT
Finch West
LRT Project

THIS IS WHY WE WORK SAFE



GETTING HOME SAFE IS ALWAYS OUR PRIORITY

Adhering to safe work practices and procedures is paramount to ensuring an incident-free workplace.

If you are unsure how to perform your task safely, always STOP and STEP BACK and speak to your supervisor.

If you SEE SOMETHING, SAY SOMETHING. Keep safety top of mind and never forget **WHY WE WORK SAFE!**

SAFETY MATTERS ... MOST!



AECON'S VISION:
To be the first company people go to for building things that matter.

ONE is a magazine published by Aecon Group Inc. for its employees and clients. For more information about Aecon, visit our website at aecon.com.

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ON THE COVER:
Eglinton Crosstown LRT Project – Caledonia Station tunnel

ON THE BACK COVER:
Bermuda Airport Redevelopment Project

This magazine includes certain forward-looking statements that contain information concerning possible or assumed future results or operations of Aecon. These forward-looking statements are based on current operating plans and competitive, financial and economic data but are subject to risks and uncertainties. Although Aecon believes the expectations reflected in these forward-looking statements are reasonable, it can give no assurance the expectations of any forward-looking statements will prove to be correct.



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FUTURE FORWARD

*By Jean-Louis Servranckx
President and Chief Executive Officer,
Aecon Group Inc.*

This is an exciting time in the evolution of Aecon. Our company is celebrating unprecedented growth, record-high backlog, important project milestones, the ongoing successful execution of long-term mega projects, and the beginnings of some dynamic new projects that are sure to write the next formative chapters in Aecon's long and accomplished history. As Aecon's new President and Chief Executive Officer, I share in this excitement and the promise of great success to come for our industry-leading and proudly Canadian construction company. I am thrilled to be part of the team making it all happen.

Our Major Projects at a Glance feature in this issue (pages 4 to 5) offers a great opportunity to see just how involved all of our business segments are in the execution and delivery of major projects across Canada – some of which are the country's largest, most complex projects under way today in our industry. The Eglinton Crosstown Light Rapid Transit (LRT) Project under the Crosslinx joint venture, and the Re-Tube and Feeder Replacement Project (RFR) at the Darlington Nuclear Generating Station under the CANATOM joint venture, are both well into their respective project journeys and successfully meeting major construction milestones. In Bermuda, the L.F. Wade International Airport Redevelopment Project continues to do the same, as construction moves forward under the Skyport banner. You will also see our continuing work on northern Alberta's Peace River Bridge Twinning Project, as well as Ontario's Union Station Revitalization and

York Viva Bus Rapid Transit (BRT) projects. Aecon projects moving closer to completion are the very successful John Hart Generating Station Replacement Project on Vancouver Island and Ontario's Highway 410 lane-widening project.

In 2018, Aecon celebrated several new project awards and embarked on projects of great magnitude, including two at Ontario's Bruce Power Nuclear Generating Station. The first is a large Unit 6 Steam Generator Replacement project and the second – under the Shoreline Power Group joint venture – is the mega Unit 6 Fuel Channel and Feeder Replacement (FCFR) Project. With the anticipation of work at "the Bruce" for years to come, Shoreline and Aecon opened a new office in nearby Kincardine, Ontario in the fall of 2018 to support our project teams. Construction has also begun this year on the massive Réseau Express Métropolitain (REM) Project in Montreal, Site C Generating Station and Annacis Island Wastewater Treatment Plant projects in British Columbia, Enbridge's Line 3 Replacement Project in Saskatchewan and Manitoba, and Ontario's Finch West LRT and Gardiner Expressway Rehabilitation projects in Toronto. Project teams are now ramping up on both the Coastal Gaslink Pipeline and Second Narrows Water Supply Tunnel – two late-2018 project awards out of British Columbia – as well as the Gordie Howe International Bridge Project in Windsor, Ontario, which, upon completion, will become the longest cable-stayed bridge in North America.

These large-scale projects – many of which are undertaken with project partners – constitute a significant portion of Aecon's current project portfolio but certainly, not all. At Aecon, there is always great pride in the diversity of our project work, which is well balanced across all operating segments and reflective of a dynamic scope that ranges from mega-integrated projects, to medium-sized jobs, to local work. We rely on this diversity – and our people across all segments of the business – to help keep Aecon at the forefront of our industry.

Looking ahead to 2019 and beyond, Aecon is strategically focused on growing and evolving while expertly, and safely, executing all projects in our record-high backlog. We know that if we are to succeed as the industry leader in construction and infrastructure development, we need to truly leverage:

• OUR PEOPLE

We're committed to supporting, developing, and celebrating our people and their valued role in Aecon's overall success. We're also committed to attracting the best talents in our industry to meet the challenges and opportunities ahead of us.

• OUR CORE VALUES

Aecon's foundational pillars – Safety First, Trust & Candour, Passion for Excellence, Results Oriented, and Learning & Development – must always be foremost in our minds and our behaviours, helping to guide our growth and evolution.

• OUR PROCESSES AND TOOLS

We are committed to further strengthening the processes and tools we use every day to ensure that we are executing with precision while enhancing both project and economic efficiencies.

When I consider what we have achieved to date as a company, and then look ahead to the opportunities that await, I can say with confidence that the future looks very bright for Aecon. Together, we can – and will – achieve great success.

I would like to thank all of you for being "Aecon Proud" in the work you do every day. I value your ongoing dedication and commitment to our company.

Wishing everyone the very best for a successful 2019 and beyond.




MAJOR PROJECTS AT A GLANCE

Current and recently completed projects with a contract value of > \$100 million
(amounts represent total contract value)

PEACE RIVER BRIDGE TWINNING PROJECT
CONTRACT VALUE: **\$148M**
COMPLETION DATE: OCTOBER 2020



SITE C GENERATING STATION AND SPILLWAYS (GSS) CIVIL WORKS
CONTRACT VALUE: **\$1.6B**
COMPLETION DATE: 2023

ANNACIS ISLAND WASTEWATER
TREATMENT PLANT STAGE 5 PHASE 1
EXPANSION PROJECT
CONTRACT VALUE: **\$252M**
COMPLETION DATE: 2021

COASTAL GASLINK PIPELINE PROJECT
CONTRACT VALUE: **\$526M**
COMPLETION DATE: 2022

REGION OF WATERLOO'S ION STAGE 1 LRT
CONTRACT VALUE: **\$583M**
COMPLETION DATE: 2017
30-YEAR MAINTENANCE AND CONCESSION TO 2049



ENBRIDGE LINE 3 REPLACEMENT PROGRAM (L3RP)
CONTRACT VALUE: **\$282M**
COMPLETION DATE: 2018

KEMANO GENERATING STATION SECOND TUNNEL (T2) PROJECT
CONTRACT VALUE: **\$364M**
COMPLETION DATE: 2020

SECOND NARROWS WATER SUPPLY TUNNEL PROJECT
CONTRACT VALUE: **\$267M**
COMPLETION DATE: 2023



JOHN HART GENERATING REPLACEMENT PROJECT
CONTRACT VALUE: **\$375M**
COMPLETION DATE: DECEMBER 2018



1 YORK VIVA BUS RAPID TRANSIT PROJECT
CONTRACT VALUE: **\$261M**
COMPLETION DATE: 2020

2 FINCH WEST LRT PROJECT
CONTRACT VALUE: **\$2.5B**
COMPLETION DATE: 2023
30-YEAR MAINTENANCE AND CONCESSION TO 2053

3 HIGHWAY 410 WIDENING PROJECT
CONTRACT VALUE: **\$156M**
COMPLETION DATE: 2018

4 GARDINER EXPRESSWAY REHABILITATION PROJECT: SECTION 1
CONTRACT VALUE: **\$248M**
COMPLETION DATE: 2020

5 METROLINX EGLINTON CROSSTOWN LRT PROJECT
CONTRACT VALUE: **\$5.3B**
COMPLETION DATE: 2021
30-YEAR MAINTENANCE AND CONCESSION TO 2051

6 UNION STATION TRAIN SHED REVITALIZATION PROJECT
CONTRACT VALUE: **\$196M**
COMPLETION DATE: 2018

BRUCE POWER UNIT 6 STEAM GENERATOR
REPLACEMENT PROJECT
CONTRACT VALUE: **\$130M**
COMPLETION DATE: 2022

BRUCE POWER UNIT 6 FUEL CHANNEL AND
FEEDER REPLACEMENT (FCFR) PROJECT
CONTRACT VALUE: **\$475M**
COMPLETION DATE: 2022



BERMUDA AIRPORT REDEVELOPMENT PROJECT
CONTRACT VALUE: **\$274M (USD)**
COMPLETION DATE: JULY 2020 – 30-YEAR OPERATIONS,
MAINTENANCE AND CONCESSION PERIOD FROM 2017 TO 2047



MONTREAL'S RÉSEAU EXPRESS MÉTROPOLITAIN (REM) PROJECT
CONTRACT VALUE: **\$5B**
CONSTRUCTION COMPLETION DATE: 2022

DARLINGTON NUCLEAR RE-TUBE & FEEDER
REPLACEMENT PROJECT (EXECUTION PHASE)
CONTRACT VALUE: **\$2.75B**
COMPLETION DATE: FALL 2026

DARLINGTON NUCLEAR TURBINE GENERATOR
REFURBISHMENT PROJECT
CONTRACT VALUE: **\$265M**
COMPLETION DATE: 2026



GORDIE HOWE INTERNATIONAL BRIDGE PROJECT
CONTRACT VALUE: **\$5.7B**
CONSTRUCTION COMPLETION DATE: 2024
30-YEAR OPERATIONS, MAINTENANCE AND
CONCESSION TO 2054

Did You Know?

FREDERICK G. GARDINER EXPRESSWAY

WHAT HAPPENS NEXT?

Aecon has been awarded a multi-million-dollar contract by the City of Toronto to rehabilitate a portion of the aging expressway under the F.G. Gardiner Strategic Rehabilitation Plan.

Scope of work for Segment 1 will include a full deck, bearing replacement and rehabilitation of the elevated structure of the F.G. Gardiner Expressway between Cherry Street and Jarvis Street (approximately 1.1 kilometres in length), rehabilitation of three ramps, as well as installation of new lighting, drainage, and a Road Emergency Services Communication Unit (RESCU) system.

The project got underway in Fall 2018 and is expected to be completed by 2021.



HISTORY IN THE MAKING

Although today many view the Frederick G. Gardiner Expressway as little more than a congested, aging structure, struggling to deliver more than 200,000 people in and out of Toronto's downtown core on a daily basis, six decades ago, when it was first built – with the help of Aecon predecessor The Foundation Company – it was considered a transportation marvel that brought essential relief to a rapidly growing city.

From its inception, one thing “The Gardiner” has always carried with it is some form of controversy. In the late 1940s, when talks first surfaced about introducing an elevated, concrete expressway to alleviate volume on Lakeshore Boulevard – the city's main west-east artery into the downtown core – there was immediate opposition to the plan. Even so, despite several heated municipal debates, a postwar steel shortage, and significant pushback from both the City of Toronto and Toronto Harbour Commission, construction officially began in 1955. The four- to six-lane expressway was completed on schedule and very close to its budget in 1966.

At the time, Toronto was flourishing following the Second World War, celebrating milestone achievements, such as a brand-new subway system and the amalgamation of neighbouring municipalities into the new Metro Toronto regional government. The addition of a new expressway to physically connect the larger region and offer a convenient thoroughfare for the downtown core was welcomed by many.

The Gardiner was built in segments along the shore of Lake Ontario, extending from the foot of the Don Valley Parkway (DVP) in the east to the junction of Highway 427 and the Queen Elizabeth Way (QEW) in the west. Over the years, the expressway helped support a significant commercial and residential boom. By the time the 1990's rolled around, however, the signs of its decline were very apparent; the Gardiner was deteriorating and in need of extensive repairs. The controversial expressway was once again the subject of much debate, which continues to this day. Is it a viable roadway or an eyesore to a now booming commercial and residential core? Should it be demolished and moved underground? Is there a better transportation solution to alleviate the never-ending congestion? Until a long-term solution can be determined, today's Gardiner continues its diligent service while ongoing maintenance and a major rehabilitation effort will ensure safe passage for the tens of thousands who continue to rely on this vital roadway every day.

LAYING THE TRACKS FOR A NEW MONTREAL

Rendering of the completed Montreal REM

MONTREAL'S RÉSEAU EXPRESS MÉTROPOLITAIN (REM) PROJECT

Montreal's new electrified rapid transit line – one of the largest public transportation projects in Canada in the last 50 years – heralds a favourable link to the surrounding regions and the city's bustling international airport.

An impressive public transportation feat, Montreal's Réseau express métropolitain (REM) is set to become one of the largest automated light rail transit lines in the world after Singapore, Dubai, and Vancouver.

The multi-billion-dollar electrified rapid transit line will connect Montreal with its suburbs in the West Island, Brossard, and Deux-Montagnes, with a branch to the Montréal-Pierre Elliott Trudeau International Airport.

Aecon has been selected to work on the project under the NouvLR General Partnership (NouvLR) consortium by client CDPQ Infra Inc. – a subsidiary of the Caisse de dépôt et placement du Québec. Comprised of Groupe Aecon Québec Ltée, Dragados Canada Inc., EBC Inc., Pomerleau Inc., and SNC-Lavalin Major Projects Inc., the partnership will engineer, procure, and construct the striking electric light rail transit network. Three of the project partners, including Aecon, hold a 24-per-cent share in the contract, while the remaining two hold 14 per cent each.

"The selection of the NouvLR partnership for this project is a significant achievement and a reflection of Aecon's ability to take on projects that are positioned on an international scale in terms of size and scope," says Marty Harris, Senior Vice President, Major Projects East. "We are honoured to have the opportunity to bring the City of Montreal a world-class public transit network and help transform its urban infrastructure to a higher level of standard."

THE SCOPE

Construction on the Montreal REM will be divided into three major segments, including 67 kilometres of double tracks, 3.5 kilometres of tunnels, 26 new accessible stations, and park-and-ride facilities with associated bus terminals.

Of the 67 kilometres of track work, about 32 kilometres will entail reconfiguring and reconstructing an existing transit line within the city's core. For five kilometres of that line, the project team will be tasked with retrofitting an existing tunnel.

"The new REM network will be integrated into the existing public transit network within Montreal," explains Gilles Audet, Technical Director for the project. "This will create a seamless transit system linking downtown Montreal, the South Shore, West Island, North Shore, and the airport. Some of the existing track will need to be replaced and integrated with the new system, resulting in a lot of structural work, track work, as well as a brand-new bridge."

The new light metro route will be primarily above ground. While the majority of it will run at grade, about 18 kilometres will be elevated, consisting of individual segments that crews will precast and assemble on site. The below-grade track will run through a 3.5-kilometre, single-bore tunnel, providing an essential link to the airport.

The project also calls for the construction of 26 stations. At a depth of 70 metres, one of the three underground stations will be the second-deepest station in North America. Much of the station work will include a variety of urban landscaping, several at-grade parking lots, and 11 bus terminals.

"NouvLR is responsible for all of the civil and infrastructure work, including track work, traction, and the power distribution systems," explains Audet. "We will also construct two Maintenance & Storage Facilities – one main maintenance facility and a second, smaller one to park the trains."

2017 OUTSTANDING TEAM AWARD

The Montreal REM pursuit team was selected as the winner of the 2017 Aecon Achievement Award in the Outstanding Team category. The team demonstrated extraordinary achievement in the completion of the project's pursuit process and collectively went out of its way to achieve commendable results for Aecon.


**TIA-OLIVIA ROJAHNSON,
SCHEDULING MANAGER**

Tia-Olivia first joined Aecon in 2009 after 11 years with HOCHTIEF Construction in the roles of Project Engineer and Work Methods/Planning Engineer.

During her time with Aecon over the last decade, Tia-Olivia has led the scheduling team on the Lower Mattagami River Hydroelectric Project and, in 2016, she joined the Montreal REM bid team as Lead Planner for what would become a very challenging, two-year-long bid phase. In that time, she was tasked with building a team of six to eight planners to oversee the development of a fully integrated schedule for the design, procurement, permit, and construction activities of the project.

Once the project was awarded, Tia-Olivia was the obvious choice to lead the Montreal REM scheduling team and, since then, the group has successfully managed to have the project schedule approved less than four months after it was awarded. Tia-Olivia's dedication and attention to detail has made her an invaluable member of Aecon's team.

2017 PAUL P. KOENDERMAN INNOVATION AWARD

This award was presented to the Montreal REM Project Controls Innovation Team for using dynamic mapping to link the project's schedule and budget. These efforts assisted many people on the project and further streamlined the project schedule, demonstrating outstanding industry-based innovation that improved upon current expectations of best practice.

"The team successfully combined new and existing technology with a great degree of skill, vision, and persistence to develop an innovative way to link scheduling and costs to produce much more accurate and up-to-date cash flows," says Marty Harris. "The overall result allows us today to estimate, track, and manage projects much more closely than we ever could. In the most literal sense, this is an innovation that has directly contributed to our bottom-line success."

Construction at the future site of one of the Montreal REM's terminal stations, maintenance facility, and parking zone



Rendering of Kirkland Station

FULLY AUTOMATED

Apart from its size and scope, the Montreal REM is notable due to its fully automated trains, making it only the third such system of its kind in Canada behind Vancouver's SkyTrain and Toronto's LINK Train at Pearson International Airport. The network's fully automated system will mean that its trains have no drivers and will instead be controlled via a computerized system linking to a control center found within the Maintenance & Storage Facility (MSF).

The trains will be equipped with control and monitoring systems, while the track will be completely isolated from the public.

"Wherever the track is at grade, we will install barriers to separate it from the public, and wherever it crosses an existing road, we will construct an overpass structure to prevent traffic issues," explains Audet.

A TEAM EFFORT

"This project is not only one of the largest transportation projects for the City of Montreal in the last 50 years but also for Aecon," notes Audet. "During its bidding process and initial planning stages, we relied on lessons learned from similar projects, like Toronto's Eglinton Crosstown LRT."

He adds that the REM has also benefitted from Aecon's experience working on the Region of Waterloo's ION Stage 1 LRT project and the consortium's overall experience with LRT work across the country.

"Many of the consortium members have worked on all of the major LRT jobs in Canada," he notes. "From Vancouver and Calgary to Toronto and Ottawa, we have a broad range of experienced team members, both design- and construction-wise. All of this past experience and knowledge has made for a very solid team."

With a strong core management team already in place, and construction well underway, the future looks very promising for a transit project that's set to create a major shift in Montreal's urban landscape.

100km/h

TRAIN SPEED

67km

OF FULLY AUTOMATED HIGH-SPEED LIGHT RAIL TRANSIT NETWORK

18km

OF ELEVATED GUIDEWAY

5

RIVER BRIDGES

26

STATIONS

\$5B

EPC CONTRACT VALUE

PROJECT FILE

**MONTREAL'S RÉSEAU EXPRESS
MÉTROPOLITAIN (REM) PROJECT**

CLIENT: CDPQ Infra Inc. (a subsidiary of the Caisse de dépôt et placement du Québec)

LOCATION: Montreal, Quebec

CONTRACT VALUE: \$5 billion (EPC contract)

JOINT VENTURE PARTNERSHIP:

NouvLR General Partnership (NouvLR): SNC-Lavalin, Groupe Aecon Québec Ltée, Dragados Canada, EBC Inc., and Pomerleau

AECON BUSINESS UNITS:

Aecon Group Quebec, Aecon Foundations

SCOPE OF WORK:

- 67 km of fully automated high-speed light rail transit network
- 26 stations (3 of which are underground, incl. 2nd deepest in North America)
- 11 bus terminals, 14 park-and-ride facilities
- 3.5 km of tunnel in the rock
- 18 km of elevated guideway
- 5 km of tunnel rehabilitation
- 5 river bridges, 25 overpasses
- 2 maintenance facilities
- Systems design and integration of the Overhead Catenary System (OCS) and Traction Power System (TPS)

EMPLOYEES ON SITE AT PEAK: 2,500 – 3,000

TIMING: July 2018 to 2023

KEY EMPLOYEES:

Marty Harris, Senior Vice President, Major Projects East
 Roger Arseneault, Stakeholder Interface Director
 Gilles Audet, Technical Director
 Ingo Gnugesser, Commercial Director
 Xavier de Nettancourt, Sector Director, South-Shore and Downtown
 Pierre Tanguay, Senior Project Controller
 Dominique Petit, Human Capital Business Partner
 André St-Pierre, Change and Subcontract Manager
 Denis Pouliot, Senior Site Manager, South Shore sector
 Isabel Fernandez, Site Manager Assistant, McGill-Central Station
 Pierre Warrant, Site Manager Assistant, South Shore sector
 Tia-Olivia Rojahnson, Scheduling Manager
 Steve Tselios, Interface Lead Engineer

NouvLR

FULL THROTTLE

FOR-
WARD

BERMUDA AIRPORT REDEVELOPMENT PROJECT

Thanks to the precise planning and behind-the-scenes work of the Aecon Concessions group, the Bermuda Airport Redevelopment project has been checking off one milestone after another since the start of construction.

It's been just over a year since Aecon launched the highly-anticipated Bermuda Airport Redevelopment Project. During that time, the project team has been very hard at work, staying on schedule and hitting key construction milestones on the island's contemporary new airport.

CONSTRUCTION UPDATE

Over the course of the past year, the largest and most visible advancement on the project has been the construction of the new terminal. Its massive structure has quickly taken shape thanks to the nearly 3,400 tonnes of structural steel the crews have been erecting since December 2017.

"Having managed the operations of Bermuda's airport for more than a decade, I am all too familiar with the intricacies of the building and why it was crucial to build the new terminal," says Aaron Adderley, Bermuda Skyport President. "We were initially excited to break ground and now, even more so with the building

impressively taking shape. It's our hope that the modern facility and improved operations will usher in a new, premium passenger experience for both residents and visitors alike."

In addition to the frame of the new building, the team also initiated the curtain wall process. This has entailed the installation of the exterior envelope of the building, which is comprised primarily of hurricane-resistant glazing. As a result, the outside of the new terminal will be both visually attractive and offer an exposed, airy feel. The installation of the final piece of the puzzle, the terminal's roof, has also begun and is expected to be finished by early 2019. The terminal itself will open in 2020.

"The on-time completion of the structural steel was a significant milestone for us," says Aecon Project Director Conor Smyth. "The efforts made by our Bermudian contractors, Benson Steel and Correia Construction, have been tremendous, considering that six weeks of installation time was lost to Bermuda's

challenging weather. Most importantly, the steel installation was completed safely, without any lost time injuries."

STAYING LOCAL

From the outset, one of the main objectives on this project was to engage the local community in as many aspects as possible and to the fullest extent. With the combined efforts of the Aecon-led construction team and Skyport — the separate Bermudian entity created to carry out the overall project — the majority of the workforce is and continues to be Bermudian.

"To date, the project's workforce consists of 70-per-cent local workers, which is a tremendous accomplishment and has a large and positive impact on a country like Bermuda," says Aecon Concessions President Steve Nackan. "We've exceeded all targets in terms of local employment and the extent to which we've engaged local companies, both in construction and in operations."

A worker installs the exterior envelope of the new terminal



IJGLOBAL 2017 NORTH AMERICAN AIRPORT DEAL OF THE YEAR AWARD

This prestigious and international award recognizes the innovative approach required to privately finance and deliver the L.F. Wade International Airport project using a hybrid Public-Private Partnership (P3) and Government-to-Government (G2G) structure.

IJGlobal is an infrastructure and project finance magazine providing market intelligence for the energy and infrastructure finance industry.



90%

OF SKYPORT'S WORKFORCE IS BERMUDIAN

500,000+

TOTAL MANHOURS WITHOUT A LOST TIME INJURY (LTI)

60%+

OF THE OVERALL PROJECT WORKFORCE IS BERMUDIAN

190-200

AVERAGE OF WORKERS ON THE PROJECT AT ANY GIVEN TIME

250+

WORKERS ON SITE AT PEAK

277,000sq.ft.

THE SIZE OF THE NEW TERMINAL AREA

Aerial view of the new airport terminal



The last piece of structural steel being installed on the new terminal



AARON ADDERLEY, PRESIDENT, BERMUDA SKYPORT CORPORATION
Aaron joined Skyport following more than 20 years of experience in the tourism, international business, and aviation industries. He is responsible for leading the day-to-day activities of the company formed by Aecon to oversee the operation of the Bermuda L.F. Wade International Airport and the development of its new passenger terminal. Aaron has a proven track record in international government negotiations, air services development, airport construction, and master planning. He is a member of the Airport Council International (ACI) Latin American Caribbean Board, and a former member of the ACI World Governing Board, the Bermuda Chamber of Commerce Board, the Bermuda National Tourism Board, and the Raleigh International Bermuda Board.



CONOR SMYTH, PROJECT DIRECTOR, AECON AIRPORT CONSTRUCTORS LIMITED
Conor first joined Aecon in 2016 following 13 years of successful project delivery in the Caribbean region, including the Norman Manley International Airport in Kingston, Jamaica, the five-star Park Hyatt Hotel in Saint Kitts and Nevis, and the award-winning Marriott Hotel in Haiti. Conor received his Bachelor of Construction Engineering & Management from the University of Ulster in 2002 and is a member of the Chartered Institute of Building (CIOB) in the United Kingdom.



MAKING THE SWITCH

One of the most crucial initiatives on the project will be planning the airport operations transition from the current terminal to the new one. In the airport industry, this is referred to as Operational Readiness, Activation, and Transition, or ORAT: the process of taking a newly constructed building and turning it into a fully functioning airport.

“It’s a highly technical, complex project-management task of shutting down one terminal and activating another one, all carried out overnight,” explains Nackan. “We are currently building the team that will be responsible for this transition and for coordinating and managing every single government agency and stakeholder that uses the existing L.F. Wade International Airport. It’s going to be hard to get everyone marching to the same tune but we’re very excited about getting it underway.”

The two-year planning period will require tremendous attention to detail to ensure all stakeholders are prepared to operate out of a completely new building with new operating procedures and processes. To its advantage, the Aecon Concessions team comes to the table with proven expertise, having successfully executed a similar, much more complex version of ORAT on the Quito International Airport Project in the late 2000s.

SAFETY CULTURE

In 2018, workers on the Bermuda Airport Redevelopment Project celebrated a major safety milestone with 250,000 manhours worked without any Lost Time Incidents (LTIs). It was an incredible accomplishment for the Bermudian workforce and a direct reflection of the project’s strong safety culture and dedicated safety training, as led by Aecon Concessions and Aecon Airport Constructors.

The project has now reached and surpassed 500,000 manhours without any LTIs. Smyth says the milestone “is attributed to project-wide diligence and dedication to the safety programs and procedures that collectively help keep everyone safe every day.”

“We have completely changed the overall safety culture on this entire project, and not just within the construction segment, but also when it comes to operations,” explains Nackan. “Yes, it’s vital to enforce and evaluate safety on site, but we’ve gone a step further and implemented a safety management system that has allowed us to evaluate and transform how we’re performing from an operational point of view, as well.”

HIGH ENERGY

DARLINGTON NUCLEAR RE-TUBE & FEEDER REPLACEMENT PROJECT (EXECUTION PHASE)

Since kicking off nearly a decade ago, the Darlington Nuclear Generating Station Refurbishment Program has moved through a series of phases, realizing significant progress along the way. For the Aecon and SNC-Lavalin 50/50 joint venture project team working on the program's Execution Phase of the Re-tube and Feeder Replacement (RFR) project in Clarington, Ontario, the year 2018 marked two important milestone achievements.

Operating on site under the "CANATOM" banner, the project team celebrated two years of work on Darlington's Unit 2 nuclear reactor and more than 11 million hours without a Lost Time Injury (LTI). The latter is a significant safety triumph given the complex work environment and the large number of trades working on the project.

"At Darlington, our project teams make a daily commitment to be relentless in our efforts to keep workers safe," says Aecon Nuclear Senior Vice President Sean Sexstone. "This commitment is what makes a project of this size successful. Our number one goal is to ensure our workers go home in the same condition they arrived. Safety is at the forefront of everything we do because everything else falls into place as a result of that."

The Unit 2 nuclear reactor at Darlington was taken offline on October 15, 2016, signaling the beginning of the four-unit Execution phase of the \$2.75-billion RFR project. Scope of work during this expected 10-year phase includes refurbishment of each of Darlington's four CANDU reactor cores to remove, repair, and replace critical components using the tools and methods developed and tested during the project team's Definition phase (2010 to 2015).

The duration for each unit "outage" is approximately three to three-and-a-half years, although it is expected this time frame may be reduced with subsequent outages. Rather than follow a sequential order, the reactors will be taken offline as follows: Unit 2, Unit 3, Unit 1, and lastly, Unit 4.

Currently, the CANATOM project team has accomplished about 70 per cent of the scheduled work on Unit 2 and completed the installation of 480 calandria tubes, a major contractual milestone on this reactor.

"I am really pleased to report the team is making significant overall progress," says Cliff Eubanks, Executive Director, CANATOM.

Looking ahead, the team will move through fuel channel installation before loading the fuel directly into the channels, restoring the reactor, and wrapping it all up by implementing the lessons learned on Unit 2 before moving on to Unit 3.



WHAT IS CANATOM?

In 2018, Aecon and its SNC-Lavalin joint venture partner celebrated the launch of a new team name on the Darlington Refurbishment project: CANATOM.

The team adopted the CANATOM name as part of a larger strategic initiative to further strengthen its focus on safe and successful project delivery under the multi-year, multi-billion-dollar contract.

"Working as CANATOM has made a tremendous impact on site," notes Eubanks. "Over the past 10 months, we have seen vastly improved safety performance, with fewer High Maximum Reasonable Potential for Harm incidents and medically treated injuries. We've made great progress as a cohesive, integrated team."

CANATOM
POWER GROUP



POWERING UP AT BRUCE

BRUCE POWER NUCLEAR GENERATING STATION

Aecon's proven nuclear experience has set the stage for a solid partnership with client Bruce Power, yielding two major contracts at the largest nuclear generating station in the world.

The Bruce Power Nuclear Generating Station lies on the eastern shore of Lake Huron in Ontario. The largest nuclear generating station in the world by total reactor count and total output, it has been operational since 1977, providing 30 per cent of the province's electricity.

Given its age and output, the nuclear facility is now facing a much-needed rehabilitation. As a result, its operator, Bruce Power, recently unveiled the Life-Extension Program, aimed to ensure the plant's CANDU units can safely operate until 2064. This massive overhaul entails the Major Component Replacement (MCR) program, consisting of numerous project contracts to address the rehabilitation of the existing plant's reactors.

It's a lot of work, and Bruce Power has enlisted Aecon and its project partners to kick off the initial part of a long journey to completing it all safely and on time.

"This is a tremendous opportunity for Aecon to leverage its extensive experience and lessons learned from delivering nuclear refurbishment projects across the province," says Sean Sexstone, Aecon Nuclear Senior Vice President. "It's extremely important for us to be able to continue to play a key role in providing clean, reliable, and affordable energy in Ontario."

UNIT 6 STEAM GENERATOR REPLACEMENT PROJECT

The multi-year, multi-million-dollar contract to replace steam generators at Unit 6 of Ontario’s Bruce Nuclear Generating Station is the initial phase of Bruce Power’s Major Component Replacement (MCR) program.

Under a fully integrated joint venture partnership known as the Steam Generator Replacement Team (SGRT), Aecon, AECOM, and AREVA NP will be removing eight original steam generators at Unit 6 and installing replacement steam generators, along with performing any plant-related modifications.

The SGRT team has already embarked on the \$130-million project and is in the process of completing all pre-planning and engineering work required for the Unit 6 steam generator replacements.

Going forward, SGRT has additionally signed a long-term Preferred Supplier Agreement. As part of Bruce Power’s MCR program, the agreement calls upon the joint venture team to carry out steam generator replacements for the plant’s remaining five units.

“This agreement will allow Aecon and our partners to continue to strengthen our presence in the Bruce Power community and further solidify our relationship with our client,” adds Sexstone.

WHAT IS A STEAM GENERATOR?
A nuclear reactor core produces a lot of heat that’s used to convert water into steam. This conversion process is conducted by steam generators, also known as heat exchangers.



Aecon Executive Chairman John M. Beck signs the Unit 6 Steam Generator Replacement project contract

PROJECT FILE

UNIT 6 STEAM GENERATOR REPLACEMENT PROJECT

CLIENT: Bruce Power

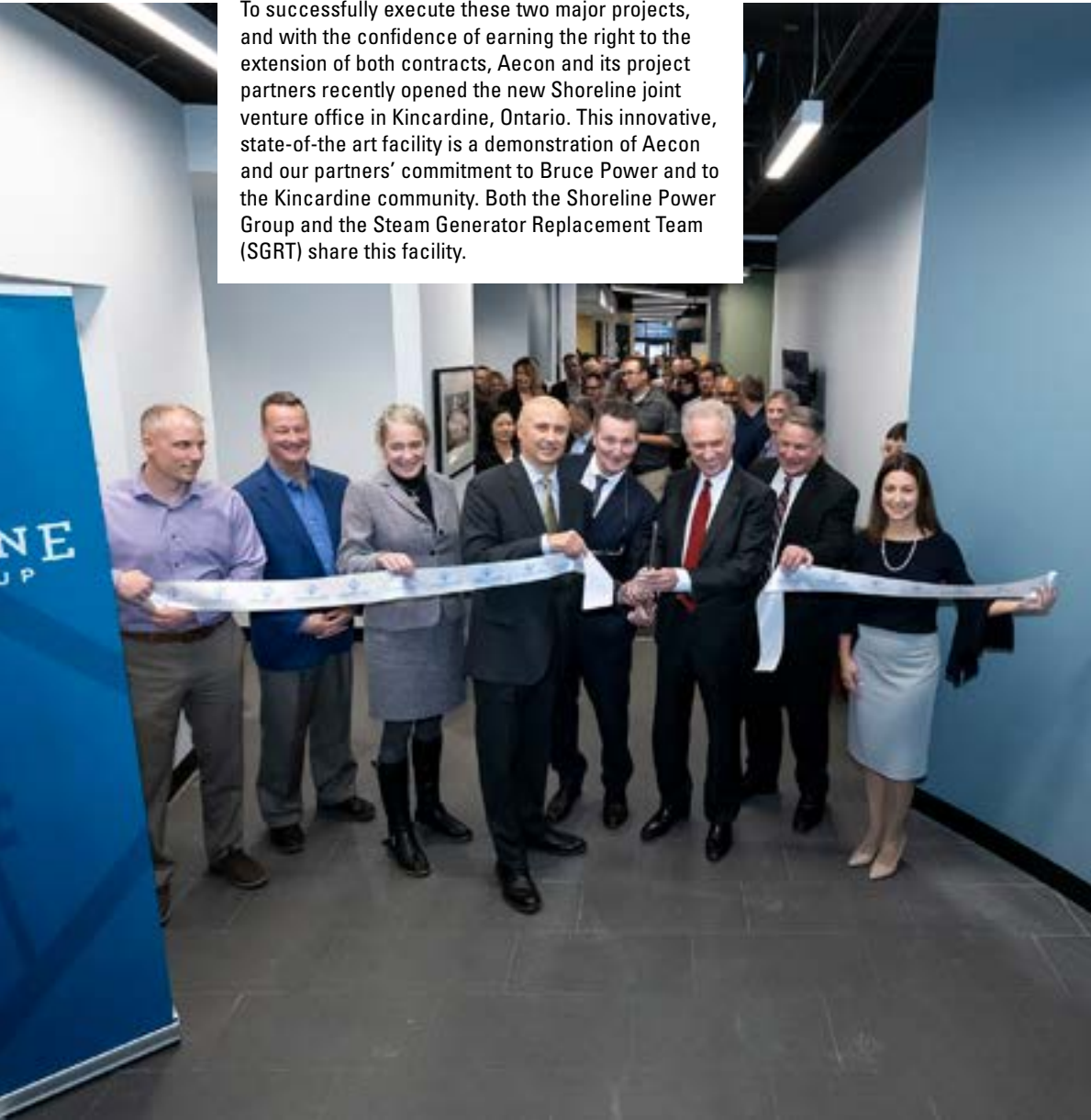
LOCATION: Kincardine, Ontario

CONTRACT VALUE: \$130 million

JOINT VENTURE PARTNERSHIP: The Steam Generator Replacement Team (SGRT): AECOM, Aecon and AREVA NP

AECON BUSINESS UNITS: Aecon Industrial

TIMING: Completion in 2022



PROJECT FILE

UNIT 6 FUEL CHANNEL AND FEEDER REPLACEMENT (FCFR) PROJECT

CLIENT: Bruce Power

LOCATION: Kincardine, Ontario

CONTRACT VALUE: \$475 million

JOINT VENTURE PARTNERSHIP: Shoreline Power Group: Aecon, SNC-Lavalin and AECOM

AECON BUSINESS UNITS: Aecon Industrial

TIMING: 2018 to 2022



UNIT 6 FUEL CHANNEL AND FEEDER REPLACEMENT (FCFR) PROJECT

The centrepiece portion of Bruce Power’s Major Component Replacement (MCR) program, the \$475-million Unit 6 Fuel Channel and Feeder Replacement (FCFR) project is also taking place at the Bruce Nuclear Generating Station in Kincardine, Ontario, and will focus on the refurbishment of Unit 6, the first of six reactors being restored by Bruce Power.

This joint venture team – operating under the banner Shoreline Power Group – will focus on the removal and replacement of calandria tubes, 480 pressure tubes, and 960 feeder tubes – the type of nuclear work that Aecon has specialized in for the better part of a decade. The rest of the scope of work includes construction management and trade labour.

“Having already established a strong local presence in Kincardine through our current role on the Unit 6 Steam Generator Replacement Project, it’s really important for Aecon to play a role in Bruce Power’s MCR program and to further strengthen our relationship with the other consortium members and the local community,” says Frank Gross, Project Director.

Similar to the Unit 6 Steam Generator Replacement Project, this project consortium has also signed a Preferred Supplier Agreement with Bruce Power. The agreement outlines the opportunity for the project consortium to be awarded similar contracts for the remaining five units scheduled to be refurbished over the next 16 years under the MCR program.



Aecon President and CEO Jean-Louis Servranckx at the Shoreline JV office grand opening

FROM WASTE

RESOURCE

TO

ANNACIS ISLAND WASTEWATER TREATMENT PLANT STAGE 5, PHASE 1 UPGRADE

Leveraging a proven partnership on the Regina Wastewater Treatment Plant Upgrade, Aecon has once again teamed up with Graham Infrastructure to rehabilitate the Annacis Island Wastewater Treatment Plant in Delta, B.C.

14

MUNICIPALITIES CURRENTLY
SERVICED BY THE PLANT

1.25M

RESIDENTS SERVICED BY
THE PLANT ANNUALLY

175B

LITRES OF WASTEWATER TREATED
BY THE PLANT ANNUALLY

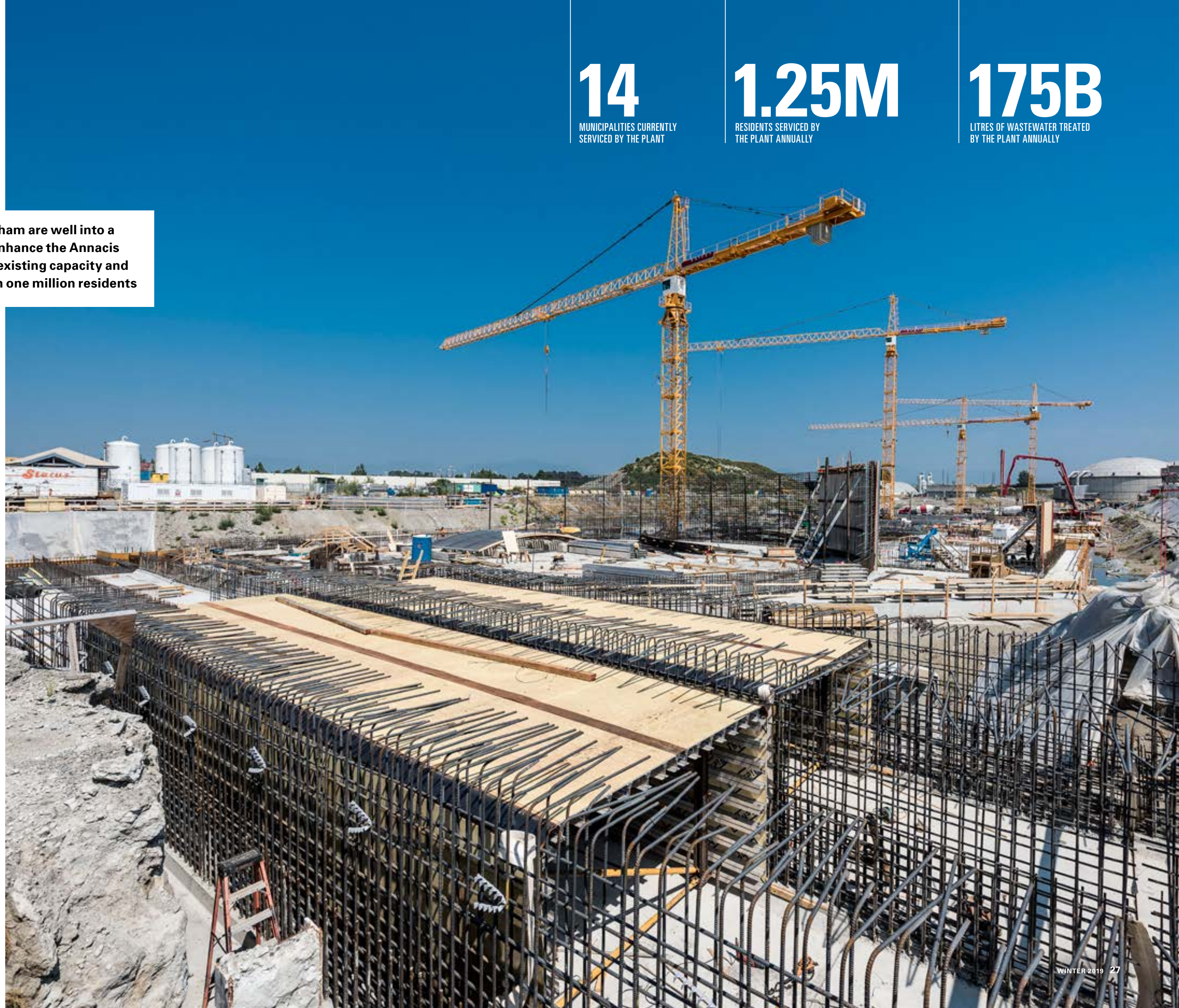
Joint venture partners Aecon and Graham are well into a multi-million-dollar upgrade to help enhance the Annacis Island Wastewater Treatment Plant's existing capacity and ensure continued service to more than one million residents in the region.

For more than 20 years, the Annacis Island Wastewater Treatment Plant (WWTP) serviced the wastewater needs of 14 municipalities in the south Metro Vancouver region. In recent years, however, the region's growing population and the plant's aging infrastructure prompted a major upgrade project to increase the plant's wastewater treatment capacity, enhance its seismic capabilities, and optimize green energy opportunities and odour management. In May 2017, Metro Vancouver awarded a \$252-million contract to the Aecon and Graham joint venture to carry out Stage 5, Phase 1 of the plant's upgrade plan.

A LOOK BACK

In December 2016, the Aecon and Graham joint venture partnership successfully completed the Regina WWTP Upgrade project.

"The ability to work together successfully as a team on the Regina project proved to be really beneficial when we were awarded this project," notes Assistant Director Herb Mussbacher. "It's very similar type of work on this project but the contract value and scope is much larger and requires far greater interface between our team and the other maintenance and engineering groups. Being well established as a team has given us the opportunity to really hit the ground running and focus on that interface."



SCOPE OF WORK

Overall, the Annacis Island WWTP Upgrade project calls for the construction of a new outfall pipe to carry treated wastewater from the plant to the Fraser River, expansion of the existing plant to increase wastewater processing capacity, the introduction of seismic resiliency features for the new construction to withstand the impact of a potentially major earthquake, the installation of an enhanced odour controls system, and the launch of a more reliable backup power source for the plant.

Aecon and Graham kicked off their contribution to the overall rehabilitation program – the Stage 5, Phase 1 contract – in May 2017 and are expected to complete construction in spring of 2021. The team is tasked with:

- Constructing five new primary sedimentation tanks to supplement the plant's existing tanks and to filter out everything from heavy solids and lighter oils to soap and scum from the sewage that enters the plant prior to going into the next stage of filtration.

- Building six new clarifiers that will continue to remove particles from the wastewater prior to its final treatment stage and before entering the Fraser River.
- Constructing 800 metres of channels and tunnels.
- Performing more than 150 critical tie-ins to the existing mechanical/electrical systems as well as upgrades to the plant's existing systems. Secondary systems, such as HVAC, will also be added to various structures.
- Building two new facilities: an electrical building, which will house all of the major electrical Motor Control Centres (MCC) for the primary portion of the sewage treatment plant, and a primary odour control building, which has new, installed equipment to help stop odours from escaping the plant into the surrounding area.

"We will be carrying out all of the work while the plant remains operational, which entails a lot of planning and working carefully around the way the plant operates in order to avoid any disruptions or spillage."



\$252M
CONTRACT VALUE OF THE
ANNACIS PLANT UPGRADE



DAN STUDER, SENIOR SUPERINTENDENT

Dan's connection to Aecon goes back 30 years. He's been a pipefitter and, over the years, has also gained experience in design engineering. Above all, however, Dan's strength is his ability to lead his crews to successful project delivery. He knows the project like the back of his hand. When it comes to the Annacis Island WWTP Upgrade project, Dan is known for safely directing his crews toward major project milestones, developing a strong and positive relationship with the client, and ultimately, playing a key role in ensuring the project will be delivered on time and within the allotted budget.

PROJECT FILE

ANNACIS ISLAND WASTEWATER TREATMENT PLANT STAGE 5, PHASE 1 UPGRADE

CLIENT: Metro Vancouver

LOCATION: Delta, British Columbia

TYPE OF CONTRACT: Lump Sum

CONTRACT VALUE: \$252 million

JOINT VENTURE PARTNERSHIP: Aecon and Graham Infrastructure (50/50)

AECON BUSINESS UNIT: Aecon Water Infrastructure

SCOPE OF WORK:

- Construction of 5 new primary sedimentation tanks
- Construction of 6 new clarifiers
- Construction of 800 metres of channels and tunnels
- Mechanical and electrical upgrades to the plant's existing systems
- Construction of 2 new facilities: electrical building and primary odour control building

TIMING: May 2017 to April 2021

EMPLOYEES ON SITE AT PEAK: 300

KEY EMPLOYEES:

Glen Sinclair, Executive Director
Herb Mussbacher, Assistant Director
Richard McLatchie, Senior Construction Manager
Bill Smith, Senior VDC/Planner
Dan Studer, Senior Superintendent
Kim Mulrooney, Senior Document Controller
Ryan Johnson, Commissioning Project Manager

PEOPLE MATTER

MEET: JOHN CHOW

VICE PRESIDENT, CONSTRUCTION
AECON CONSTRUCTION MATERIALS LIMITED (ACML)

PASSION FOR THE PROJECT

It's a remarkable achievement to look back on a three-decade-long career and realize it never seemed like work at all. But that is exactly how John Chow, Vice President, Construction, ACML feels upon his retirement from Aecon.

From a very young age, John simply followed his passion for construction and found the ideal outlet as an engineer with Aecon. That revelation allowed him to not only pursue his passion on a full-time basis but also play an important role in building things that matter.

When did you start working with Aecon?

I started in 1980 with [Aecon predecessor company] Armbro, working as a Project Coordinator. I remember my first job was in Pic River, about three hours east of Thunder Bay, Ontario. I worked there until about 1990, and then I became a Superintendent. That's how I started to focus more on running and building projects.

When did you make the shift from the field into the office?

After a few years as a Superintendent, I moved into the role of Estimator, which brought me into the office. At one point, I was the only engineer in our group. After a short period, I became Manager of Construction for ACML and began overseeing the construction of bridges. That was around the time Aecon began working on the Highway 407 ETR project,

during which I ran an entire division. After work on the 407 wrapped up, I became Vice President for ACML and continued to focus on highway, road, and bridge projects.

Did you always know what you wanted to do for work?

Not really until the year that I chose to take Civil Engineering at the University of Waterloo. They had a special program through which you were able to work for four months and then go to school for another four months. It was during those work periods that I realized I knew exactly what I wanted to do.

When I graduated, I applied to a lot of companies, and, fortunately enough, one did choose me. It was Dufferin Construction. But after working there for a few years, I realized they weren't what I was looking for and that's when I made the move to Armbro.



In addition to the 407 ETR, what are some of the other major projects you've worked on at Aecon?

As a Superintendent, I took on the Highway 400 and Highway 407 ETR projects. One of the last major ones I worked on was Highway 401 at Union Road in the London, Ontario, area. That was a job that I bid three-quarters on before going into the hospital for a kidney operation.

Was that a difficult experience for you?

It was very surprising. I went to see the doctor a week before and she told me that I needed to have surgery, but I wasn't even on the waitlist yet. The following week, I got a call from St. Michael's Hospital [in Toronto], and they told me to come in. I remember thinking, "I'm not quite ready for this." They gave me about 10 minutes to decide, but then my wife stepped in said, "You better go!"

How long were you away from work?

I was really out of commission for about two months. I had pain in other parts of my body, aside from the surgery, and that made me very uncomfortable for that entire period of time. But the staff at the hospital did a very professional job, and once I began to heal, I felt much better. Unfortunately, because of my age, I still have some complications. I try to live day to day and it's working. I'm happy and I'm mobile. I've been able to see my granddaughters a lot more, which I feel like I missed out on in the past.

Why do you feel like you had missed out?

Because I worked so much. A normal day for me ran from 7 a.m. to 6 p.m. But I never considered

it work. There were only a few days in my career that I actually considered to be work and that was when there was an issue on a project. But even then, we all worked together to figure it out, to talk to one another, and to build something the best way possible. My kids still say that they were happy to see me whenever they could and grateful for what I did for them.

Do you get to spend more time with your family now?

We live very close to one of my daughters, and my wife babysits one of our three grandkids. Unfortunately, because I worked so much, my wife and I didn't have too many hobbies. But we did get to do quite a bit of travelling.

Where have you travelled to?

We went to Ottawa a lot because we had friends there. We also took many trips to Vancouver, Newfoundland, Montreal, and Moosonee. I think the only province we didn't step on was Manitoba.

Any plans to discover the rest of the world now that you're retired?

I've never been to Europe and, originally, never had plans to go, but now, depending on my health and recovery post-surgery, I may go.

Why did you stay in this industry for all these years?

This was always a good and challenging job for me. In my earlier years, I gained a solid understanding of what Aecon was all about. I was a young kid out of school and didn't always know which way to turn, but the senior staff and fellow employees that I worked with were very seasoned and good teachers; they helped me a lot.



EMPLOYEE FILE

JOHN CHOW

POSITION: Vice President, Construction

DIVISION: Aecon Construction Materials Limited (ACML)

EDUCATION: University of Waterloo (1977)

HOMETOWN: Toronto, Ontario

CURRENT HOME: Etobicoke, Ontario

HOBBIES AND INTERESTS: Travelling across Canada with the family

EXPERIENCE ON THE LINE

ENBRIDGE LINE 3 REPLACEMENT PROJECT — 2017 to 2018

Aecon continues to leverage its proven pipeline construction experience on one of North America's largest pipeline infrastructure programs.

Final weld inspection

At an estimated cost of \$5.3 billion in Canada, Enbridge's Line 3 Replacement Program is the largest capital project in the company's history. It involves the replacement of approximately 1,070 kilometres of crude oil and liquids pipeline between Hardisty, Alberta, and Gretna, Manitoba. Once it is completed and in service in 2019, the new pipeline will transport up to 760,000 barrels per day of light, medium, and heavy crude.

The project was initiated by Enbridge to better serve current and future petroleum demand in North America and to reduce the frequency and magnitude of ongoing maintenance activities while ensuring continued safe operation of Line 3.

Construction in 2018 includes six segments or "spreads," totaling some 600 kilometres of 36-inch-diameter carbon steel pipeline. Two of those (Spreads 8 and 9 between Glenboro and Gretna in southern Manitoba) are being carried out by SA Energy Group – a 50/50 joint venture partnership between longtime collaborators Aecon and Robert B. Somerville.

This contract is not a new venture for SA Energy Group. Back in 2017, the JV successfully delivered Spreads 3 and 4 (totaling 261 kilometres of new pipeline) between Rosetown and Regina, Saskatchewan. Upon completion of the work, SA Energy Group was well positioned for the opportunity to pursue additional work on Line 3 this year.

The proposal was submitted in February 2018 and SA Energy Group received conditional award of Spreads 8 and 9 in April. The construction of the two spreads – totaling 188.7 kilometres of new pipeline – began in August 2018 and is expected to be mechanically complete by the end of 2018, with final remediation to be finished in the summer of 2019. All in all, this is an aggressive timeline for a project of this magnitude.

"It's a very large job and it's moving very quickly," confirms Tyler Madigan, Vice President & Managing Director for SA Energy Group.



A crew hard at work

2017 OUTSTANDING TEAM AWARD — HONOURABLE MENTION

The Aecon Utilities team responsible for successfully completing Spreads 3 and 4 of the Line 3 Replacement Program in 2017 as part of the SA Energy Group received an Honourable Mention in the Outstanding Team Award category of the 2017 Aecon Achievement Awards. The team was recognized for its efforts to work collaboratively with Enbridge to proactively and expeditiously address all requirements through the deployment of additional resources, implementation of innovative solutions, and the accommodation of all regulatory requirements and requests.

"Through the efforts of this team, the project received tremendously positive feedback, reviews, and audit results from all stakeholders," notes Madigan. "The work was completed on schedule and with good commercial performance. As a result, we've continued to strengthen our relationship with Enbridge, further our strategic alliance with Robert B. Somerville, and enhance our reputation as a preeminent partner for major pipeline projects."

188.7km

OF NEW PIPELINE TO BE BUILT IN 2018



SCOPE OF WORK

The work done by SA Energy Group will primarily take place on existing farmland across the southern Prairies. Madigan explains that installing new pipeline is familiar work for Aecon and generally follows the same process wherever the work is taking place.

“It begins with separating surface soil layers, grading the right-of-way and engineering the pipeline to follow design alignments and the natural contour of the land,” explains Madigan. “After this, a

stringing crew uses specialized trailers to move the pipe to the right-of-way, where they carefully distribute the pipe joints according to the engineered design.”

The pipe joints are then reshaped to meet the designed pipeline alignment and joined together using sophisticated automatic welding systems under the direction of experienced and licensed welders. Each weld is subjected to non-destructive testing using ultrasonic and/or radiographic inspection and then coated with advanced materials to provide corrosion

protection. After the pipeline is welded and coated, crews excavate the trench, carefully lower the pipe sections into the ground, join (tie in) the sections using manual welding, and backfill the pipeline.

The completed pipeline is then hydrostatically pressure tested and subjected to in-line inspection to ensure integrity.

After the pipe is buried and tested, Madigan says, “The final step of the process is remediating the land to a condition as good or better than what it was before the work began.”



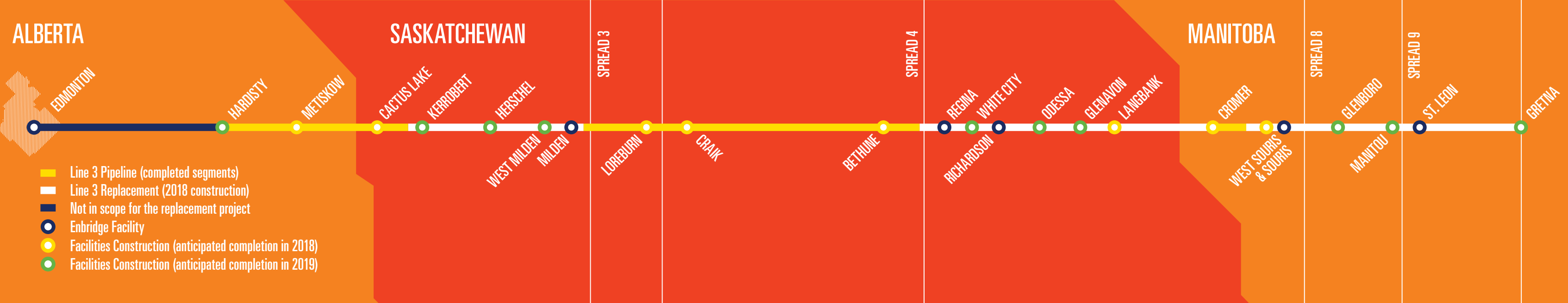
HELPING OUR CLIENTS HELP THEIR COMMUNITIES

In addition to the Enbridge Line 3 project, Aecon is hard at work rehabilitating compressor station CS-9 as part of Enbridge’s T-South Reliability and Expansion Program across British Columbia.

It was within this context that Aecon and a group of fellow contractors were invited to take part in Enbridge’s Helping Hands in Action initiative, where workers give back to the community in which they work and live through “sweat equity.”

Aecon volunteers spent the day on the Cheam First Nation reserve in Rosedale, B.C., constructing and erecting a community message board and building a playground for the local children. The playground was built from scratch and involved laying gravel, building mini retaining walls, and assembling jungle gyms.

“This was a great opportunity to meet people from the Cheam First Nation community, as well as partners and clients, and work alongside other Aecon team members who I never would have had the opportunity to meet otherwise,” says Leah Soares, Aecon Design Coordinator. “We all have different roles at Aecon, so when we were asked to come together to build a playground from scratch, it was interesting to see how each person had something different to bring to the table. It was a long day, but the look on the kids’ faces when they got off the school bus and saw their brand-new playground made it all worthwhile!”



REGULATORY COMPLIANCE

Due to the magnitude and prominence of the Line 3 Replacement Program, the JV team worked closely with Enbridge and the industry regulator – the National Energy Board (NEB) – to develop enhanced safety and environmental measures, as well as state-of-the-art and innovative welding processes.

“The regulatory involvement on this project is the most that we’ve ever encountered,” attests Madigan.

Working in collaboration with the NEB, the stakeholders, and the client, SA Energy Group implemented the following safety and environmental initiatives:

- Installation of rear-view cameras, blind spot cameras, and proximity detectors on all mobile equipment
- Application of a sophisticated biosecurity program that includes strict equipment-cleaning requirements, installation of equipment wash stations, and digital documentation and tracking of all equipment cleaning
- Use of state-of-the-art automatic welding systems for all mainline welding
- Development and implementation of a thorough Indigenous engagement and inclusion plan



DANIELLE VICKERS, PROJECT ENGINEER, SA ENERGY GROUP

Danielle has worked with SA Energy Group for the past four years and was an integral part of 2017 construction on the Enbridge Line 3 Replacement Project.

“Danielle’s attention to detail and commitment to excellence are unmatched,” says Madigan. “She has worked diligently through various roles on mainline pipeline projects, continuously increasing her knowledge and taking on more responsibility.”



PROJECT FILE

ENBRIDGE LINE 3 REPLACEMENT PROJECT – SPREADS 8 AND 9

- CLIENT:** Enbridge Inc.
- LOCATION:** Glenboro to Gretna, Manitoba
- TYPE OF CONTRACT:** Lump Sum
- JOINT VENTURE PARTNERSHIP:** SA Energy Group (50/50 Aecon and Robert B. Somerville)
- AECON BUSINESS UNITS:** Aecon Utilities
- SCOPE OF WORK:**
· 188.7 km of cumulative new crude oil pipeline construction: Spread 8 = 92.2 km; Spread 9 = 96.5 km
- TIMING:** August 2018 to December 2018
- EMPLOYEES ON SITE AT PEAK:** 1,400

- KEY EMPLOYEES:**
Tyler Madigan, Vice President / Managing Director
Joe Phillips, Senior Construction Advisor
Ryan Hoyle, Operations Manager
Craig Graham, General Manager
Brandon Hall, Project Controls Manager
Ray Donkers, Office Manager
Chris Adams, Project Manager (Spread 8)
Georges Guerette, Project Manager (Spread 9)
Ernie Ochocki, Superintendent (Spread 8)
Loren Drake, Superintendent (Spread 9)
Carl Anderson, Assistant Superintendent (Spread 8)
Travis Draeger, Assistant Superintendent (Spread 8)
Kirk Ochocki, Assistant Superintendent (Spread 8)
Paul Prive, Assistant Superintendent (Spread 9)
Stan Jacklin, Assistant Superintendent (Spread 9)
Cy Fediuk, Assistant Superintendent (Spread 9)

1,400

EMPLOYEES ON SITE AT PEAK



One of two new specialized horizontal directional drills on the job

AECON HELPS BRING NATURAL GAS TO ONTARIO'S KAWARTHA REGION

Aecon's Utilities group has been enlisted to construct an extensive natural gas pipeline network that will service Ontario's cottage country community of Fenelon Falls. The contract furthers Aecon's already established partnership with Enbridge, this time as part of Enbridge Gas Distribution's Community Expansion Program to bring natural gas services to unserved communities within the province's Kawartha region.

In April of 2018, Aecon began to construct a 60-kilometre pipeline that would signal the transition from other fuel sources to natural gas in and around the Fenelon Falls community and help serve more than 1,500 new customers in the area.

The scope of work entails two portions of pipeline, both 30 kilometres in length: the mainline portion, which will house high pressure gas, and a 30-kilometre distribution segment that will spread directly to customer homes and businesses.

"We're proud that Enbridge Gas Distribution has entrusted Aecon Utilities with helping to build this project," says Aecon Utilities Senior Vice President, Eric MacDonald. "We're working closely with their on-site team to manage the unique risks that come along with building a project in close proximity to people's homes and businesses. As a result, we have been channeling much of our efforts toward mitigating the public's concerns with restoration and access issues, existing utilities, and traffic controls."



DID YOU KNOW?
The Fenelon Falls project calls for Aecon to debut two specialized horizontal directional drills (D40x55DR S3 Navigator Horizontal Directional Drills), marking the very first use of these impressive machines in Canada.

"This is the first project in which Aecon has used these machines, and it's been extremely successful in powering through some pretty difficult rock conditions," says MacDonald. "So far, our work remains on time, on budget, and without any Lost Time Injuries (LTIs)."

While most people think of drilling as a vertical action, these machines are most notable for their horizontal drilling capabilities. The added bonus of their dual rod technology allows for crews to power through the work safer and faster.



CYCLING FOR THE CURE WITH OUR PARTNER

Over the years, Aecon has partnered with Enbridge on more than just construction projects. Enbridge's largest annual charity fundraising initiative is the Ride to Conquer Cancer in support of The Princess Margaret Cancer Centre. Team Aecon has been a proud supporter of The Ride for seven years, raising more than \$674,000 toward cancer awareness, research, and cures.

The annual event draws thousands of participants and brings together communities of cancer survivors, cyclists, and supporters who train and fundraise in order to participate in two days of road riding in several regions across Canada. The 2018 event in Toronto – the largest participating region – drew 4,555 riders and raised \$18.3 million.

Having started with only five members in their first year of participation, Team Aecon has grown to more than 50 cyclists in 2018 with an overwhelming amount of support coming in from Aecon employees, subtrades, suppliers, union partners, and friends.

It is a point of pride for Aecon to not only be Enbridge's partner out on the field but also to stand behind a cause that is near and dear to so many of its participants and supporters.




PEOPLE MATTER

MEET: NATHALIE DINNISSEN

PROJECT ENGINEER
MAJOR PROJECTS WEST

EYE ON THE PRIZE

Although the number of women entering the engineering field in Canada has increased over the last decade, women remain underrepresented in the profession. According to *Engineers Canada*, fewer than 13 per cent of practising licensed engineers in this country are women. Aecon Project Engineer Nathalie Dinnissen, who has experienced that imbalance firsthand, has a clear message for young women contemplating life as an engineer: Go for it!



Tell us about your early years. Did you know that you wanted to be in construction when you were younger?

Not at all. The work I do today as a civil engineer is quite different from what I originally thought I was going to go into. My paternal grandparents originally emigrated from Holland to Kapuskasing, Ontario, and started a dairy farm. In addition to working there, my dad became a full-time, heavy-duty mechanic and he continues to manage his own log hauling and equipment rental company, called Dinnissen Inc., with his brother. I always thought I'd help continue the family business but my path led me to engineering. Coincidentally, I later found out that my great uncle, who lived in Holland, was a civil engineer. It was exciting to hear that.

I'll always remember when I was in high school, all the

students took a career-oriented test and my score showed that I'd be better suited to be a nurse or a secretary. As it turns out, that was definitely not accurate! I think that receiving those results may have pushed me toward a more male-dominated field so that I could prove women aren't limited to the conventional industries.

What did you study in university?

I first studied business at Laurentian University and disliked it. That's when I decided to go into carpentry, which led me to pursue an education in the engineering field. I graduated from a three-year Civil Technology program at Algonquin College in Ontario and then transitioned over to Lakehead University to earn a Bachelor of Civil Engineering. In 2016, I received my professional designation as a civil engineer.



What led you into carpentry in the first place?

I took woodworking in high school and really enjoyed it. Even when I was younger, I would always be out and about in nature, looking to create something. I thought about maybe becoming a carpenter. Then, in college, I had a pretty awesome professor who encouraged me to get my civil engineering technology diploma, and so I took his advice. But after that, I took it even further, and step by step, I found that engineering was the direction I wanted to go in.

What was your experience like as a woman studying engineering?

It made me feel powerful. Being there was exciting and rewarding. I think there were only about 10 women in the engineering discipline at the time and a total of three in my graduating class. But because I grew up with three brothers and two sisters, I've always gotten along with everyone, especially large groups of people. Being one of the few women in class didn't make me feel out of sorts. In fact, it encouraged me to go further and dedicate myself to

completing the program. I wanted to show others that women can make it in this industry. But most of all, I think I wanted to prove to myself that I could accomplish this.

Where did your construction career begin?

I started off working on highway construction projects during my summers with a company called M.J. Labelle Co. in Kapuskasing. From there, I went on to work as a Surveyor for Leo Alarie and Sons. After I graduated from Lakehead University in 2011, Leo Alarie took me on as Project Coordinator. They eventually got bought out by Aecon, which is ultimately how I ended up being an Aecon employee.

What are some of the jobs you've been involved with at Aecon?

I worked on several smaller jobs in Timmins [Ontario]. After about a year, I was asked to move to Trail, British Columbia, to work on the Waneta Expansion Generating Station project as a Field Engineer. I didn't hesitate because it's always been a goal of mine to move out west. That's when I

met Scott Marshall (Construction Manager, Aecon Major Projects West) and his great team. After Waneta, I moved on to the John Hart Generating Station Replacement project [in Campbell River, British Columbia] as a Project Engineer, and I've been here ever since!

What is it like working as an engineer today?

I like to think I get along with my coworkers – most of whom are male – really well. I'm very much used to being one of the only few women because the work I've done so far has all been mostly male-dominated. That being said, I'd love to see more women in this field. I think we add a lot of value. Whenever a woman comes to site, I'm always compelled to take her under my wing and mentor her. I try to encourage her to stand her ground. It's understandable that it can be challenging, especially working out in the field, but you have to try to not take things too personally.

How have you managed working in what is still a male-dominated industry?

I've always had to believe in myself and make an effort to

build my own reputation. I've learned how to be clear, concise, and confident when going into meetings, working on site, and talking to the crews. Sometimes, it can be a day-to-day struggle to be taken seriously, but if you have the right knowledge and experience to back you, people will respect you. Sometimes, it doesn't hurt to be loud!

Were there any particular people who helped you along your journey?

Working with Scott Marshall, who used to be my manager, helped me build my confidence. He believed in me. And having that mentor figure was what I needed to keep going forward in my career.

What would you say to another woman who has her sights set on pursuing a career in engineering?

I'd say, go for it! Don't be discouraged by anyone. If you want something challenging, this is definitely the route to take. At the end of the day, it's an exciting and fantastic career path, with many ups and downs. It's not always easy but it is very satisfying.

EMPLOYEE FILE

NATHALIE DINNISSSEN

POSITION: Project Engineer

BUSINESS UNIT: Major Projects West

EXPERIENCE:
 2011 – 2012 Leo Alarie and Sons – Project Coordinator
 2012 – 2014 Aecon Major Projects West – Field Engineer
 2014 – present Aecon Major Projects West – Project Engineer

EDUCATION:
 Cambrian College (2005) – Certificate in General Carpentry
 Algonquin College (2008) – Civil Engineering Technician Diploma and Technology Diploma
 Lakehead University (2011) – Bachelor of Engineering Civil Degree

HOMETOWN: Kapuskasing, Ontario

CURRENT HOME: South Slokan, British Columbia

HOBBIES AND INTERESTS: Fishing, knitting, exploring the great outdoors

FULL SPEED AHEAD

EGLINTON CROSSTOWN LIGHT RAIL TRANSIT (LRT) PROJECT

The state-of-the-art Eglinton Crosstown Light Rail Transit (LRT) project – one of Aecon’s largest infrastructure projects to date – continues to push forward with full force, checking off major construction milestones along the way and moving closer to a finish line that holds the promise of an innovative new public transit network for Toronto.



THE BACKGROUND

In 2010, the City of Toronto had approved a key project in that plan – the Eglinton Crosstown LRT, which bisects the city at its midtown point, running from Weston Road in the west to Kennedy Station in the east. Following a competitive process, CTS was awarded a contract in July 2015 to design, build, finance, and maintain the Eglinton Crosstown LRT under a Public-Private Partnership (P3) model.



The Crosslinx Transit Solutions (CTS) consortium, consisting of Aecon and project partners ACS Infrastructure Canada, EllisDon, and SNC-Lavalin, is more than three years into construction on the 19-kilometre Eglinton Crosstown Light Rail Transit (LRT) project and the progress has been transformative. In the early stages of construction, much of the work took place behind the scenes and deep below ground as crews completed two large tunnels to facilitate the flow of transit traffic in both directions across Toronto. Soon enough, other parts of the Crosstown started to come to life along its Eglinton Avenue route as the team embarked on some of the more visible elements of the project, including the Eglinton Maintenance and Storage Facility (EMSF) and Mount Dennis Station at the site of the former “Kodak Lands,” as well as elevated bridge work, and the surface portion of the line.

Upon its completion in 2021, the Crosstown is set to offer a new rapid transit route across the city to thousands of people that ride the TTC on a regular basis. Featuring a combination of 15 underground stations and 10 at-grade surface stops, the new LRT line will be an intricate transit communications network linking to 54 bus routes, three subway stations, the regional GO Transit system, and Toronto’s Union Pearson (UP) Express route.



Construction work on Mount Dennis Station

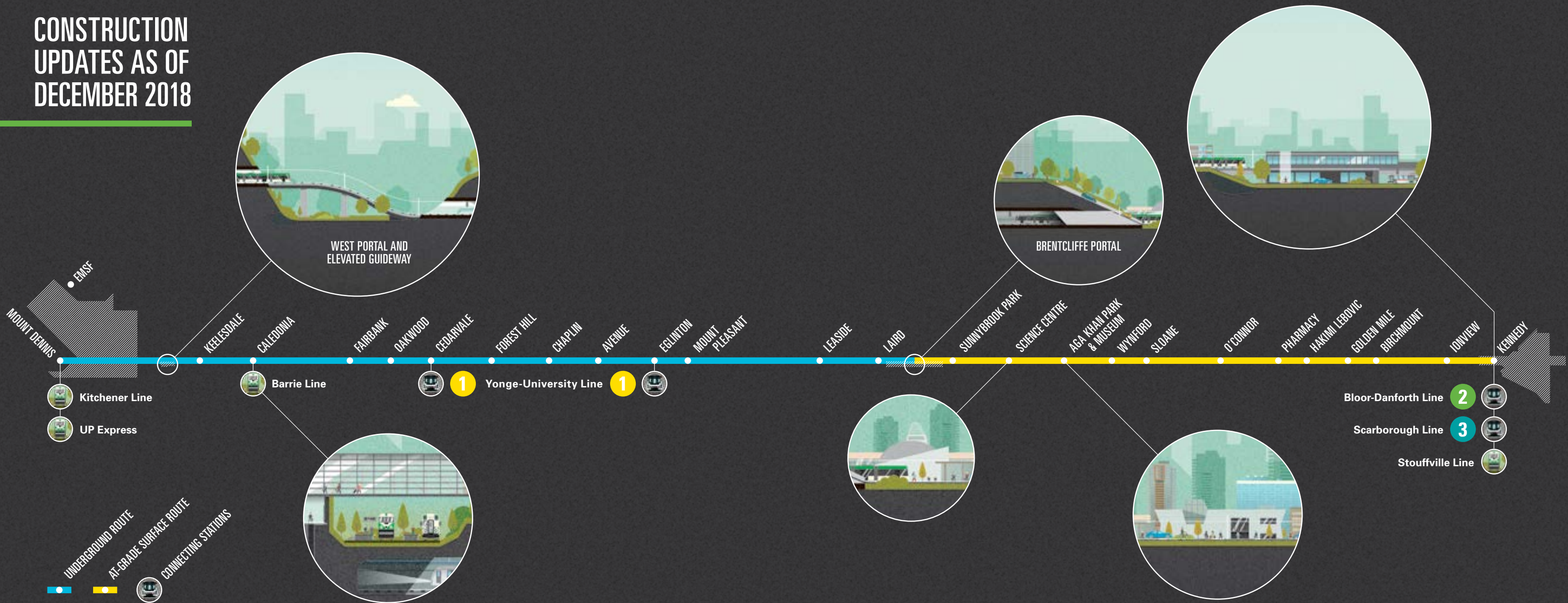
Open cut excavation at Fairbank Station



Open cut excavation at Caledonia Station



CONSTRUCTION UPDATES AS OF DECEMBER 2018



Eglinton Maintenance and Storage Facility (EMSF)

The EMSF is deemed "ready to receive light rail vehicles" and the team has obtained an occupancy permit from the City of Toronto.

Mount Dennis Station

Crews have completed platform masonry work and the upper roof deck. They are now focused on finishing drywall and taping, as well as formwork for the bus terminal tunnel. Architectural finishes, such as tiling, in the station's back-of-house are well underway.

West Portal and Elevated Guideway

A significant portion of concrete pours on the elevated guideway have been completed and the team continues formwork and cantilever installation on the Black Creek bridge.

Keele Dale Station

Crews have completed rebar work in the latest invert slab and successfully poured concrete for the station's platform level walls.

Caledonia Station

Two of the seven invert slabs have been poured and rail is being delivered through the station for track construction between Caledonia Station and Cedarvale Station.

Fairbank Station

The station's main entrance and service building are completed with sights now set on completion of the first roof slab.

Oakwood Station

Mining work at the station's main entrance continues and, with temporary water connections now active, watermain lining has begun.

Cedarvale Station

The station is now waterproofed and insulated on the top-down slab. The track team has finished installing the stretch of rail between Cedarvale Station and Avenue Station. Piling operations are now in progress at the main entrance area.

Forest Hill Station

Utility work is heavy at this station as crews continue excavation at the secondary entrance as well as backfilling, compaction, and reinstatement of ventilation ducts.

Chaplin Station

All piling work is now complete and wet utility work has begun at the north side of the station. Shallow excavation is also underway in a new section of the station box.

Avenue Station

Excavation for the station's cavern, as well as its main and secondary entrances, is ongoing.

Eglinton Station

Steel for the northwest traffic deck is being installed while crews have begun piling work on the southwest portion of the station.

Mount Pleasant Station

Crews are nearing completion on the piling work at the southwest section of the station, while nearby Taunton Road is being reinstated.

Leaside Station

This station is currently undergoing piling and wet utilities work.

Laird Station

The cavern between the main and secondary entrances is nearing completion at this location.

Brentcliffe Portal

While road work is ongoing at this site, crews have completed all dirt backfill and moved onto backfilling granular layers. They are also continuing to form and place rebar for the walls and headwall of the portal. Inside the tunnel, duct bank work is ongoing.

Sunnybrook Park Stop

This station isn't under construction as yet. Crews are preparing with road widening, utilities, and bridge work.

Science Centre Stop

Crews are working on the station's pedestrian tunnel by installing new struts and the necessary utility support. Concrete has been poured for the main entrance and formwork for the electrical, mechanical, and condenser pit walls has been completed.

Aga Khan Park & Museum Stop to Birchmount Stop

These stations are not yet under construction as crews prepare with road widening, utilities, and bridge work. Civil road work activities include installation of catch basins and manholes.

Ionview Stop

Crews continue portal excavation and lagging work between Ionview Station and Kennedy Road.

Kennedy Stop

The Kennedy Station team reached a significant milestone in 2018 by successfully handing over the newly restored north bus platform to the Toronto Transit Commission (TTC). Rail track excavation, lagging, and dewatering well activities are underway.



MAJOR MILESTONE

Out of its three major contractual milestones, the project celebrated achieving its first marker on September 28, 2018 (three days ahead of schedule) with substantial completion of the EMSF and readiness to receive light rail vehicles.

The completion of the EMSF hasn't been the only key development on the westernmost (and busiest) point on the line. The other significant and very visible development in the same area has been the construction of Mount Dennis Station. The first station on the line to take noticeable shape, Mount Dennis will be completed and ready for testing by the end of 2019.



Interior of the Eglinton Maintenance & Storage Facility (EMSF)



Aerial view of the EMSF



EMSF from a distance



Interior of the new Mount Dennis Station (previously known as Kodak Building Nine)



Tracks leading to the EMSF

WHAT HAPPENS NEXT?

Up until 2018, the LRT project scope of work was divided into six segments, each one being led by a designated segment lead. The focus was primarily on the design of the stations and systems network, as well as on wet and dry utility work, shoring, excavation, utility relocation, the initial civil build of the individual stations, and major surface works and track installation.

Marty Harris, Aecon's Senior Vice President, Major Projects East, explains that the team and segments reorganized to best support the next phase of project development.

"Over the course of 2018, the project team restructured its work from six segments, which were heavily based on civil work, to about two, in addition to all of the systems work. The focus for 2019 will be on transitioning into more of an architectural build-out of the stations, with concentration on the integration of all systems, including the trains, tracks and utilities."

And while much of the work to date has been focused on the western portion of the LRT line, crews will soon begin working on the surface stops at the eastern end of the line.

The project team has worked diligently in 2018, with all work completed on time and on budget – a significant accomplishment for a project of this magnitude and complexity.

Fairbank Station open cut construction

Fairbank Station



Caledonia Station



ART WORK

A visual highlight of the project's 2018 schedule was the unveiling in January of select station designs, including a series of integrated art installations that will appear across the LRT route in six designated stations: Mount Dennis, Caledonia, Cedarvale, Eglinton, Science Centre and Kennedy.

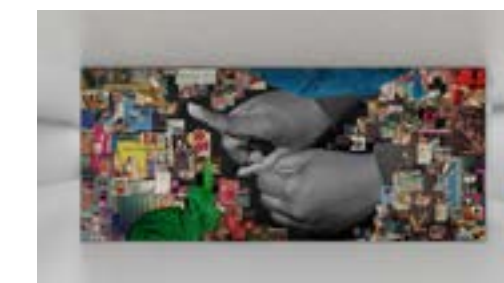
With support from Metrolinx's Design Excellence program, Crosslinx commissioned a group of contributing artists to specifically create artworks that were impactful and context-appropriate for their respective spaces and the surrounding neighbourhood.



Eglinton Station – Artist: Rodney LaTourelle with Louise Witthöft



Caledonia Station – Artist: Janice Kerbel



Mount Dennis Station – Artist: Sara Cwynar

FINCH WEST LIGHT RAIL TRANSIT (LRT) PROJECT

As the public transit build-out continues in Ontario's Golden Horseshoe region, Aecon and its project partners get to work on the long-awaited Finch West Light Rail Transit (LRT), connecting and mobilizing northwest Toronto.

In recent years, Aecon, both on its own and through its project partnerships, has been playing an important part in helping Metrolinx and Infrastructure Ontario connect communities as part of the government's comprehensive regional public transportation plan for the Greater Toronto and Hamilton Area (GTHA). The latest role for Aecon is the Finch West LRT project. As a consortium member of Mosaic Transit Group (Mosaic) with partners ACS Infrastructure Canada Inc. and CRH Canada Group Inc., Aecon is poised to help link the diverse neighbourhoods of northwest Toronto to the city's main rapid transit system and larger regional transit network.

IN THE BEGINNING

In April 2018, following an intensive bidding process led by Aecon, clients Metrolinx and Infrastructure Ontario named the Mosaic consortium as the successful bidder to design, build, finance, and maintain the new \$2.5-billion Finch West LRT.

"Having led the pursuit of the Finch West LRT on behalf of Mosaic, Aecon was responsible for the overall management and delivery of the bid, the negotiations of commercial and financial agreements, and for bringing the project to financial close," explains Aecon Concessions President Steve Nackan. "This project is a reflection of our strong reputation with clients and our ability to deliver large-scale, complex transit solutions."

Each member of Mosaic is an equal partner (33.3 per cent) in the equity and construction of the project, with Aecon and ACS Infrastructure Canada Inc. each having a 50 per cent interest in the 30-year maintenance agreement for the LRT system.

"This project will continue to showcase Aecon's strength in the development and construction of large-scale and complex projects," notes Marty Harris, Senior Vice President, Major Projects East. "We will also be able to leverage our extensive experience on the Region of Waterloo's [ION Stage 1] LRT project and Eglinton Crosstown LRT project to ensure we deliver on time and on budget."

IN TRANSIT



Finch West LRT
Station concourse

All renderings courtesy
of Mosaic Transit Group



Maintenance and Storage Facility interior

THE DETAILS

Mosaic has been tasked with delivering an 11-kilometre LRT line along northwest Toronto’s Finch Avenue West, from Humber College in the west and Keele Street in the east. When it goes into service in 2023 as projected, the line will link to several public transit systems across the region, including GO Transit, TTC, MiWay, Viva Rapid Transit, and Züm.

Mosaic will be responsible for designing and building 16 surface stops, one below-street-level stop and one underground station (to be connected to the new Finch West LRT Subway Station), as well as a maintenance and storage facility for the LRT vehicle fleet. The team will also install track work, signaling, communications, and other required infrastructure, as well as rehabilitate the Highway 400 bridge at Finch Avenue West.

In addition, Mosaic will be held responsible for the ongoing maintenance and rehabilitation of the LRT system and any associated infrastructure over the next 30 years, with client Metrolinx as Owner and the Toronto Transit Commission (TTC) as Operator. A total of 18 Light Rail

Vehicles (LRV) will be manufactured in Brampton, Ontario, and delivered by Alstom. From a design standpoint, the project is being led by a number of top industry players, including Arup Canada, Dillon Consulting, DPM Energy, DTAH, and Sener SES Canada.

WORK IN PROGRESS

Since receiving the contract, the Mosaic team has been steadfastly focused on preparing plans for all aspects of the project, from design, construction, traffic and transit management, to environmental and communication activities. For its part, Metrolinx has been coordinating with the city’s utility companies to replace current gas pipelines along the project’s main corridor before the start of construction, which is set to officially begin in spring 2019.

TRAFFIC MANAGEMENT PLANS

One of the main challenges for a project of this scale and scope is traffic flow, which is why Mosaic has dedicated significant time to developing a strategic and robust traffic management plan.

“Traffic management has been a huge part of the planning process on this project for us,” notes the project’s Construction Director, Yener Aydin. “Our goal has been to decrease the impact of construction on the community as much as possible and to deliver an LRT of the highest standard.”

In addition to the in-house traffic management specialists currently working with the group, the project team has also brought on board a third-party traffic management company to assist with elements like permits, design plans, and plan approvals.

“One of the ways in which we’ve developed our traffic management plan is by figuring out what types of construction solutions would best suit the project and the neighbourhood in which we will be working,” explains Aydin. “For example, we have settled on using the top-down construction method for the underground stations on the line because it has demonstrated to have the least amount of impact on traffic. If we know there are multiple diversion requirements at specific locations, we have planned to stage them ahead of time to reduce the risk of any traffic glitches.”

11km

LENGTH OF (LRT) SYSTEM

18

LRT STOPS

600

EMPLOYEES ON SITE AT PEAK

\$2.5B

CONTRACT VALUE



Martin Grove Stop



Humber College Station portal



Humber College Station entrance



COMMUNITY BENEFITS

Transit riders along the proposed Finch West LRT route have access to bus service, but its reliability is affected by the levels of traffic congestion on the roads.

“Projects like this one have the potential to provide social and economic benefits for the entire neighbourhood,” says Aydin. “The Finch West LRT will allow people to seamlessly connect to the TTC and other transit providers in the GTA.”

Similar to the Eglinton Crosstown LRT project that began in 2016, the Finch West LRT will also initiate a Community Benefits Program with the objective of introducing positive impacts for the neighbourhoods along the route and people living in the GTA, including hiring locally; providing skills development, training and apprenticeship opportunities; and supporting small and medium-sized business and social enterprises. Among the estimated 600 workers who will work on the project, 85 per cent will come from the GTA.



ANDRIY YARYMOVYCH, FINANCE MANAGER, MOSAIC TRANSIT CONSTRUCTORS

Among his many responsibilities on this project, Andriy is overseeing the development and management of a successful finance team. Prior to joining Mosaic, Andriy worked on the TTC Sheppard Tunnels and the Eglinton Crosstown – Eastern Tunnels projects. An Honours graduate of Wilfrid Laurier University’s Economics and Accounting program, he also holds a Post-Graduate Certificate in Financial Planning from Humber College. Andriy is a Chartered Professional Accountant (CPA) and the recipient of the inaugural Aecon Finance Outstanding Performance Award.

“Andriy’s professionalism, discipline, sense of responsibility, and teamwork are what make him such a valuable part of our team and a great asset to the organization,” says Aydin.



RAFAEL MIDENCE, PROJECT DEVELOPMENT MANAGER, CONCESSIONS

Rafael is a member of the Aecon Concessions origination team through which he supports Aecon’s development, financial, and investment activities for Public-Private Partnership (P3) projects. As part of the Concessions team working on the Finch West LRT project – an Aecon-led pursuit – Rafael coordinated the day-to-day activities on behalf of Mosaic. This also involved organizing the effort to raise more than \$750 million in private financing (debt and equity) and assisting in closing the financing in record time. Rafael holds a Bachelor of Engineering from Ryerson University and an MBA from McMaster University.

“Rafael played a pivotal role in coordinating the many work streams and advisory groups that were required to put the Finch West LRT bid together,” says Eitan Ladizinsky, Senior Vice President, Concessions. “Leading a project of this scale and complexity demonstrates Aecon’s top-tier standing in the infrastructure development market.”



Finch West LRT Station upper level

PROJECT FILE

FINCH WEST LRT PROJECT

CLIENT: Metrolinx and Infrastructure Ontario

LOCATION: Northwest Toronto, Ontario

TYPE OF CONTRACT: Design-Build-Finance-Maintain / Public-Private Partnership (P3)

CONTRACT VALUE: \$2.5 billion

JOINT VENTURE PARTNERSHIP: Mosaic Transit Group; Aecon, ACS Infrastructure Canada Inc., and CRH Canada Group Inc.

AECON BUSINESS UNITS: Major Projects East, (Aecon Infrastructure and Management Inc. (AIMI)), Aecon Concessions

SCOPE OF WORK:

- Design, build, finance and maintain an 11-kilometre Light Rail Transit (LRT) system
- Construct one below-grade terminal stop, 16 surface stops, an underground interchange station, and a maintenance and storage facility
- Install track work, signaling, communications, and all associated infrastructure
- Rehabilitate Highway 400 bridge at Finch Avenue West

TIMING: Fall 2018 to 2023

EMPLOYEES ON SITE AT PEAK: 600

KEY EMPLOYEES:

Steve Nackan, President, Concessions
Marty Harris, Senior Vice President, Major Projects East
Eitan Ladizinsky, Senior Vice President, Concessions
Stephen Payne, Technical Services / O&M Vice President
Craig Harper, Deputy Technical Director
David Eyles, Operations & Maintenance Director
Remi Tremblay, Contract and Legal Director
Cecilia Macdonald, Chief Financial Officer
Rafael Midence, Project Development Manager
Vincent Rallon, Project Finance Manager
Jaime Martin, Vice President of Operations
Zvonko Trajkovic, Vice President of Systems
Yener Aydin, Construction Director
Eric Chiasson, Design Integration Manager
Andriy Yarymovych, Finance Manager
Hayat Muhammad, Traffic Integration Specialist
Paulette den Elzen, Communications & Public Engagement Lead
Steve Agla, Safety Manager
Tej Sethi, Property Access & Business Continuity Manager
Loris Coletta, Utilities Construction Manager



BRIDGING NORTH AMERICA

Gordie Howe
International
Bridge crossing

Every day, approximately 7,000 commercial vehicles cross the Windsor-Detroit border, representing an estimated 25 per cent of all trade between Canada and the U.S. It is the busiest commercial border crossing between the two countries.

GORDIE HOWE INTERNATIONAL BRIDGE PROJECT

Aecon and its project partners have embarked on the new Gordie Howe International Bridge project: a monumental, ambitious undertaking that will result in the largest Canada-U.S. border port and the promise of economic rejuvenation for the Windsor-Detroit commercial corridor.

The new Gordie Howe International Bridge is projected to provide much-needed support to this congested border hub by accelerating the flow of goods, services, and people and by offering a robust crossing alternative to the existing (and smaller) Ambassador Bridge built in 1927. Administered by Windsor-Detroit Bridge Authority – a Canadian Crown corporation – the \$5.7-billion mega-project is expected to improve transportation and launch a significant boom in the region with the creation of thousands of jobs and economic opportunities on both sides of the border.

For Aecon and its project partners – ACS Infrastructure Canada, Dragados, and Fluor Canada – who are responsible for carrying out this monumental project under the banner “Bridging North America,” the Gordie Howe International Bridge contract leverages the full extent of the consortium’s diverse expertise in large-scale delivery, from design-build to financing, operating, and maintaining this new structure for years

to come. Upon completion, the cable-stayed bridge will be 2.5 kilometres long with an 853-metre bridge span. The bridge’s twin towers will reach the height of a 73-storey building.

“This is a landmark Canadian project demonstrating Aecon’s long-standing reputation for building our nation’s landscape from the ground up,” says Aecon Concessions President Steve Nackan, whose team played a pivotal role in this Public-Private Partnership (P3) project. “It also illustrates the strength and diversity of our integrated business model and our proven expertise delivering turnkey service offerings for large-scale, complex projects, such as this one.”

Developed through a fixed-price contract, the project involves two phases: the design-build (DB) phase and the 30-year operation, maintenance, and rehabilitation (OMR) phase. The consortium reached financial close in September 2018, granting Aecon a 20 per cent interest in the equity, DB and OMR partnerships.

2.5km
CABLE-STAYED BRIDGE

2
APPROACH BRIDGES

6
LANES (3 CANADIAN-BOUND &
3 U.S.-BOUND)

\$5.7B
CONTRACT VALUE

THE PROJECT HAS FOUR MAJOR CONSTRUCTION COMPONENTS

THE BRIDGE

- Six-lanes: three Canada-bound, three U.S.-bound
- Total length: 2.5 kilometres
- One approach bridge on each side of the crossing to connect Ports of Entry in Canada and the U.S.
- Cable-stayed design
- A dedicated multi-use path to accommodate pedestrians and cyclists

THE CANADIAN PORT OF ENTRY

- Size: 130 acres
- Inbound and outbound border inspection facilities
- Toll collection facilities for both U.S.- and Canada-bound traffic
- Maintenance facility

THE U.S. PORT OF ENTRY

- Size: 167 acres
- Inbound and outbound border inspection facilities
- Commercial exit control booths

THE MICHIGAN INTERCHANGE

- 4 new road bridges
- 5 new pedestrian bridges
- Widened roads at key intersections
- Primary connecting ramps to and from the U.S. Port of Entry



Gordie Howe International Bridge border crossing between Windsor and Detroit

Construction on the bridge will span over a period of 74 months, with an estimated completion date of 2024. Early works on the project have already begun, with the Canadian side seeing the development of a four-kilometre access road, the removal of overhead lines, and preparations to protect any at-risk species in the region.

“This will be the longest cable-stayed bridge ever built in North America and the fourth largest in the world,” notes Marty Harris, Senior Vice President, Major Projects East. “We are extremely excited to participate, not only because it will elevate Aecon’s status in the construction of large-span bridges on a global scale, but we will be making a significant and positive impact on the Windsor and Detroit communities.”

PROJECT FILE

GORDIE HOWE INTERNATIONAL BRIDGE PROJECT

CLIENT: Windsor-Detroit Bridge Authority (WDBA)

LOCATION: Windsor, Ontario – Detroit, Michigan

TYPE OF CONTRACT: Public-Private Partnership (P3) / Design-Build-Finance-Operate-Maintain-Rehabilitate

CONTRACT VALUE: \$5.7 billion

JOINT VENTURE PARTNERSHIP: Bridging North America (Bridging NA) consortium: Aecon, ACS Infrastructure Canada Inc., Dragados Canada Inc., and Fluor Canada

AECON BUSINESS UNITS: Major Projects East, (Aecon Infrastructure and Management Inc. (AIMI)), Aecon Concessions

SCOPE OF WORK:

- Construction of a six-lane, 2.5-kilometre cable-stayed bridge
- Construction of a 130-acre Canadian Port of Entry
- Construction of a 167-acre U.S. Port of Entry
- Improvements to and reconfiguration of the Michigan Interchange

TIMING: Estimated completion in 2024

EMPLOYEES ON SITE AT PEAK: 2,500

KEY EMPLOYEES:

Steve Nackan, President, Concessions
Marty Harris, Senior Vice President, Major Projects East
Eitan Ladizinsky, Senior Vice President, Concessions
Yonni Fushman, Chief Legal Officer
Sean Lal, Project Counsel
Stephen Payne, Technical Services / O&M Vice President
Franca Vercillo, Vice President of Taxation
Mano Yogaratnam, Senior Controller
Rafael Midence, Senior Project Analyst
Jaime Martin, Vice President of Operations
John White, Contracts Manager
Kyle Mawhinney, Project Controls Manager
Peter Lindsay, Project Manager
Ratko Ivanovic, Technical Manager
Matt Kopczinski, Construction Manager





ELEVATING OUR SAFETY GAME

By John Green
*Senior Vice President,
Chief Safety Officer*

By its very nature, construction is an inherently dangerous industry, which is why safety is such a high priority for us here at Aecon. Over the years, our company has improved its safety performance by more than 80 per cent through incident tracking, accident assessment, and more recently, proactive accident-prevention strategic initiatives. Aecon’s shift away from tracking trailing indicators toward leading indicators brought with it significant enhancements to our overall safety record in support of our number one core value.

SAFETY TODAY
Although we’ve been eliminating needless, predictable accidents, we’re now at a point where our safety rates have flatlined, and it is proving to be a challenge to drive our incident rates lower. This is not a trend unique to Canada. From my experience in Europe and Australia, I know this to be an international issue.

We are applying traditional, albeit industry-leading safety programs and initiatives, but we are applying them to an industry that continues to evolve around us. What works for us today does not take us successfully into tomorrow.

We acknowledge that reducing incident rates further is not a matter of trying harder or engaging our hearts and minds. In fact, our current tools might be inhibiting future progress. We realize that the predictive value of low-consequence accidents, in terms of warning of potential high-impact events, is effectively zero.

It is a dangerous assumption that the absence of reported accidents means the presence of good safety. It may appear odd, but the fatality rate in the construction industry actually increases when the accident frequency decreases. Industry reports of major accidents and incidents across several industries reveal these occurrences happening on projects or venues where they have reported “an excellent safety record.”

Many organizations like Aecon are realizing that being good at safety today doesn’t mean that you are immune from disaster tomorrow. I believe that, while the established way of approaching safety may have traditionally delivered impressive results in terms of accident rates, our approaches at Aecon may be exhausted and incapable of continuing to deliver further improvements in performance.

Across our industry, there has been little improvement in accident rates overall. In fact, the industry is experiencing a rise in severe accidents and events. This is reflected in national safety statistics.

The industry is experiencing problematic, unintended consequences of focusing on strategy that is based upon controlling and constraining the workforce and viewing safety as the absence of accidents. Isn’t it odd that we want more safety and yet we continue to measure the things that we want less and less of?

SAFETY TOMORROW
I believe what is needed is a significant paradigm shift in safety that blends the successes of previous approaches with an acknowledgement that our work world is changing, and at an astonishing rate. Safety must respond accordingly if we are to make final incremental and sustainable improvements toward an injury-free work environment.

A future safety program must focus less on numbers and more on communication, in which we identify a narrative to describe an organization with effective safety management.

Instead of viewing worker error as the largest cause of accidents and the reason for what goes wrong, we need to position the workforce as the reason for why things go right. Workers can no longer be seen as

unreliable in safety terms, needing to be controlled, constrained, and monitored. After all, our employees navigate complex systems successfully every day and often have the answers. When empowered, our people will demonstrate just how adaptive they can be.

Safety must not be defined by the absence of negatives, but rather, the presence of positives. An empowered workforce must be encouraged to challenge the norms and take risks – not with their safety but as it applies to innovative new methods and approaches to how we carry out our work. As in many areas of our business, without risk there is no innovation, and without innovation we do not move successfully into the future.

Safety is an ethical responsibility, flowing downwards through the company, not a bureaucratic activity to protect against litigation. An alternative cultural view must be applied to ensure the gap between written guidelines and the actual work is understood and that safety innovation will help get the job done to the highest Aecon standards.

When it comes to safety, our people are a source of diversity, insight, and wisdom, not the source of safety error. We must transition from obsessing over what went wrong and begin to investigate, communicate, and celebrate what went right. In doing so, we will begin to cultivate a welcomed, open dialogue about risk-taking and apply the innovation lens required to evolve into an even safer, more dynamic Aecon.

I am committed to working together with everyone at Aecon to move safety forward through the introduction of significant, international safety practices and new approaches that will better meet the demands of our ever-changing construction industry.

PLANNING TO TAKE AECON TO THE NEXT LEVEL IN SAFETY





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