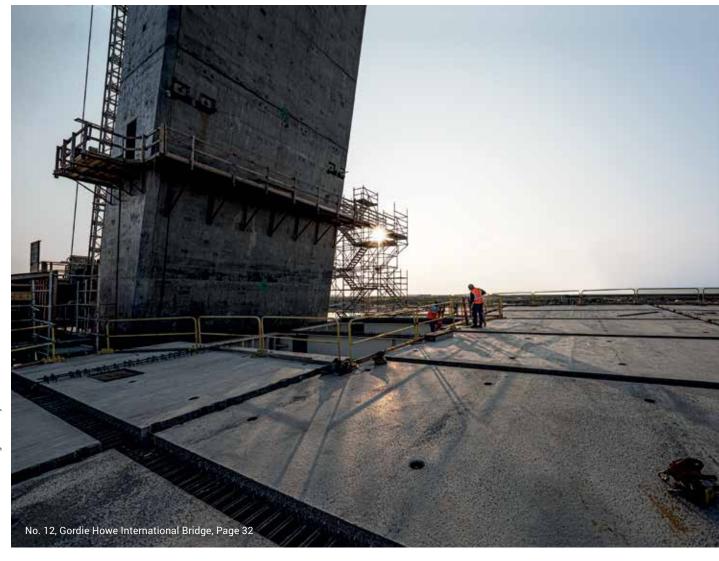
Top100 Canada's Biggest Infrastructure Projects



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Top100 Projects — 2023 An annual report inserted in ReNew Canada's January/February 2023 issue

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Change for the Better

lus ça change, plus c'est la même chose. -The more things change, the more they stay the same." I've been waiting a while to use lyrics from my favourite band-Rush-in an editorial, and this year's Top100 Projects presented the perfect opportunity.

The 2023 edition, featuring Canada's biggest public infrastructure projects, hit \$273 billion—the same total from 2022, which is amazing considering the turnover, with 11 new projects appearing in this year's report.

Of the 11 projects that are no longer on list, 10 were due to substantial completion being reached, with one project—the Calgary Event Centre being cancelled. And of the 11 new projects, 10 are making their first appearance in the report, while Metro Vancouver's North Shore Wastewater Treatment Plant returned after a one-year hiatus enlisting a new construction management team.

In the 2023 version of the report, the 11 new projects totaled nearly \$10 billion, with eight of them falling under the buildings development sector, with the remaining projects falling under the water-wastewater (2) and transportation sectors.

Overall, the transit sector leads the 2023 Top100 Projects report with a quarter of the projects, valued at \$120.6 billion, followed by the energy sector (11 projects, \$50.7 billion), the buildings sector (30 projects, \$45.4 billion), the transportation sector (19 projects, \$28.2 billion), and the water-wastewater, communications, and remediation sector (15 projects, \$28 billion).

Numerous projects in this report are public-private partnership (P3) and this model, that has been around for over 30 years, has been getting some bad publicity lately, with a pair of transit projects in Ontario-the Eglinton Crosstown LRT and the Ottawa LRT-coming under harsh scrutiny, with some calling for governments to stop using P3s entirely.

Despite some problems, many believe P3s still have a place in delivering large, complex public infrastructure projects.

"I believe not only in the viability but in the superiority of the P3 model," stated CCPPP president and CEO Lisa Mitchell. "And yeah, it's been knocked around a bit, but it hasn't been knocked down or knocked out." she told the audience at the recent P3 Conference in Toronto.

And remember the fun doesn't stop with the publication of the 2023 Top100 Projects Report. Make sure to attend our annual gala dinner of key players and owners at The Carlu in Toronto on Feb. 21, 2023, where our keynote speaker will be Ontario's Infrastructure Minister, Kinga Surma.

New this year we're excited to announce the launch of Top100 West—our first dinner event-to be held May 11, 2023 at The Pinnacle Harbourfront Hotel in Vancouver.

As we continue to improve the Top100 Projects report, we want to hear from you. We welcome your suggestions. Contact me at john@actualmedia.ca to discuss. As always, thank you for your input.

John Tenpenny, Editor, ReNew Canada

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small.

Generating more clean energy in more places, Small Modular Reactors are a big step towards a carbon-free Ontario.







2023



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top100projects.ca ReNew Canada 5



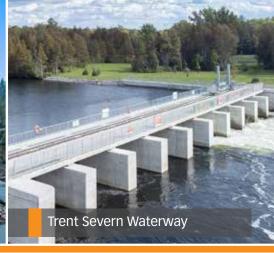
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Acronym Legend

AFP: Alternative financing and procurement

DBF: Design-build-finance

DB(F): Design-build-partial finance **DBFM:** Design-build-finance-maintain

DBFOM: Design-build-finance-operate-maintain

EPC: Engineering, procurement, and construction

EA: Environmental assessment

JV: Joint venture

LRT: Light rail transit

P3: Public-private partnership

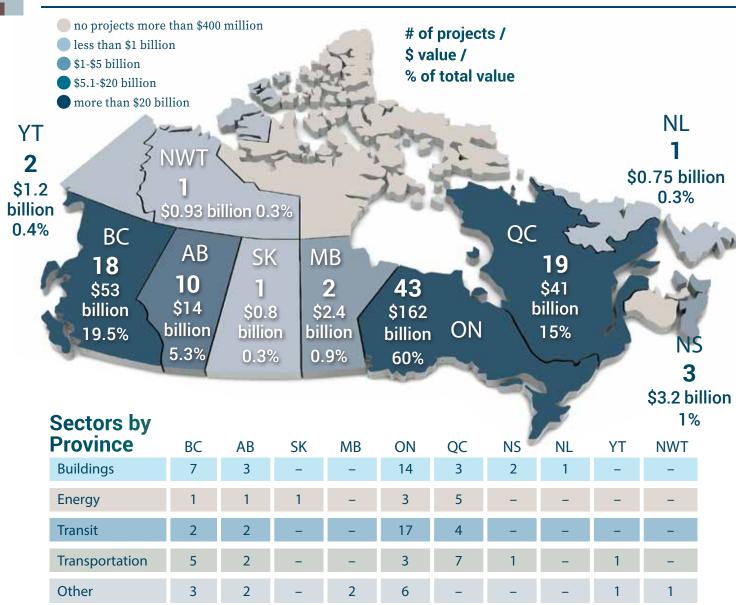
RFP: Request for proposals

RFQ: Request for qualifications

SUB: Subcontractor

TEUs: Twenty-foot equivalent unit containers

2023 **Top100 Projects**



The ESAP Energy Services Modernization has been counted in the 'Buildings' category for both ON and QC

Projects by Sector

Rail

6

LRT

12

Hydroelectric 5

Subway

只











Buildings

Energy

Transit BRT







Natural Gas

2

Transportation

Bridge Port Highway * 44 13 3 3











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X CRUXINSIGHT

HKA is pleased to announce the launch of the 2022 CRUX Claims Causation Report. To access our live causation dashboard with Canadian statistics, visit www.hka.com/crux.







1

Site C Clean Energy Project \$16 billion





2022 Rank: 1

Location: Near Fort St. John, B.C.

Owner: BC Hydro

DB(F)OM Team (Site C accommodation lodge): ATCO Two Rivers Lodging Group—ATCO Structures & Logistics Ltd. and Bird Design Build Construction Inc.

Contractor: Peace River Hydro Partners—ACCIONA Infrastructure Canada, and Samsung C&T Canada (main civil works construction)

AFDE Partnership—Aecon, Dragados, Flatiron, EBC (spillways civil works)

Allteck Line Contractors Inc. (transmission line, Site C to Peace Canyon generating station)

F&M Installations Ltd. (substation construction, balance of plant – electrical)

Mitchell Installations Ltd. (balance of plant – mechanical)

Engineer: Klohn Crippen Berger and SNC-Lavalin (engineering and design - dam and reservoir); Tetra Tech; BGC Engineering; WSP; R.F. Binnie & Associates; Lasalle | NHC (engineering and design - other); Associated Engineering (owner's team - design); Wood-a WSP company (environmental)

Environmental Services: Golder-a WSP company (EA and permitting, archaeology, agriculture, fisheries and aquatics, socio economics); Pathfinder Endeavours Ltd.; Keystone Wildlife Research Ltd.; McMillen; RWDI Air Inc.; Knight Piésold; Industrial Forestry Service Ltd. (environmental and regulatory work); Morrison Hershfield (project review for EA authority); Hemmera

Other Key Players: AL Sims and Sons (road improvements); Aon (risk advisor); BTY Group (cost consultant); Hatch (environmental permitting); KPMG (lead commercial advisor); McElhanney (engineer, materials testing, environment, and survey); McMillen Jacobs Associates (dam/tunnel analyses: design of tunnel support); Morgan Construction and Environmental (north bank); Paul Paquette & Son's Contracting (south bank); Kasian Architecture Interior Design and Planning Ltd.; WSP; ATCO Two Rivers Lodging Group (worker accommodation lodge); Paul Paquette and Son's Contracting Ltd. (south bank clearing); Morgan

Construction and Environmental Ltd. (north bank site preparation); Englobe (quality assurance services); Colliers Project Leaders; AGAT Labs; Hanscomb (cost consultant); Deloitte (risk advisor); HKA

Suppliers: Voith Hydro (turbine and generator); ATB Riva Calzoni Hydro Canada Inc. (hydromechanical equipment); Advanced Precast

Legal: Dentons Canada (owner's counsel);
Borden Ladner Gervais (legal advisor); Bennett Jones (acted for successful proponent)

Substantial Completion: 2025

Funding: Public

This hydroelectric earthfill dam on the Peace River includes several components: an earthfill dam 1,050 metres long and 60 metres high, a 1,100-MW generating station and associated structures, an 83-kilometre-long reservoir, realignment of six sections of Highway 29, and two 77-kilometre transmission lines along an existing transmission line right-of-way, connecting Site C to the existing provincial power grid.

Once complete, Site C will provide 1,100 megawatts of capacity, and produce about 5,100 gigawatt hours of energy per year – enough to power the equivalent of 450,000 homes per year in British Columbia.

Construction on the Site C project began in July 2015. Site C is now more than 65 per cent complete and remains on schedule to have to have all six generating units fully in-service in 2025.

The Site C project hit peak construction in 2022, with more than 5,000 people working on the project in the busier summer months. Construction continues to advance on all aspects of the project, including the earthfill dam, powerhouse, approach channel and work to realign Highway 29. The final segment for the last penstock unit was achieved in early July. The project's second and final 500-kilovolt, 75-kilometre transmission line was completed and energized in March 2022.

In the coming year, work will continue on the earthfill dam in preparation for reservoir filling, which could occur as early as fall 2023.

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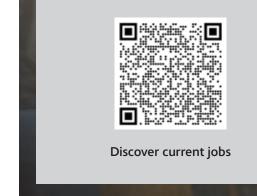


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GO Expansion – On-Corridor Works \$15.705 billion





2022 Rank: 2

Location: Greater Toronto and Hamitlon Area Owner: Metrolinx

Procurement Agent: Infrastructure Ontario **ONxpress Transportation Partners**

Systems and Integration Team: ALSTOM Transport Canada Inc. Construction, Design and Engineering Team: Aecon Infrastructure Management Inc., ALSTOM Transport Canada Inc., FCC Construccion S.A., WSP Canada Inc., Hatch Fixed Infrastructure Maintenance Team: Deutsche Bahn

International Operations GmbH, Aecon O&M, a division of Aecon Construction Group Inc.

Operator Team: Deutsche Bahn International Operations GmbH, Aecon O&M, a division of Aecon Construction Group Inc. Other Key Players:

Morrison Hershfield (engineer: planning and environmental); Wood-a WSP company (consulting); Dillon Consulting (architectural services); Golder-a WSP company (geotechnical studies); EY (mgmt. consultant); Deloitte (mgmt. consultant); Comtech (project mgmt. consultant); Entuitive

Funding: P3 **Substantial Completion: 2032**

As On-Corridor Works is a complex regional project with multiple external interfaces, stakeholders, utility and operational elements, it is being delivered as a Progressive DBOM (design-build-operate-maintain) model.

In a Progressive model, the project features a collaborative approach between the project owner and the contracting partner.

In the Spring of 2022, Metrolinx and Infrastructure Ontario (IO) executed an agreement with ONxpress Transportation Partners (ONxpress) to enter the Development Phase of the On-Corridor Works project—the largest project in Metrolinx's GO Rail Expansion program.

Unprecedented in its scale and complexity, this multi-billion-dollar capital program will transform the regional rail network with electrification, more frequent service, shorter journey times and a more modernized system for the Greater Toronto and Hamilton Region.

Transit Expansion

The Top100 includes 27 projects and \$121.3 billion invested in LRT, rail, subway, and BRT infrastructure.



12 ReNew Canada











\$8.3 billion

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Bruce Power Refurbishment \$13 billion*





2022 Rank: 3

Location: Tiverton, Ont.

Owner: Bruce Power

DBFM Team (Office Complex and Training Facility): Concert Infrastructure—Bird Construction, Stantec Concert Realty Services—Stonebridge Financial Corp.

Engineer: Hatch (preliminary/planning study); Wood-a WSP company (consulting engineer); Tetra Tech (MCR); Candu Energy (MCR)

Contractor: AECOM, Aecon, AREVA NP; Framatome (steam generator replacement); Black & McDonald (Unit 6 mechanical and electrical projects); Shoreline JV: Aecon, AECOM, SNC-Lavalin (Fuel Channel Feeder Replacement program); ES Fox, BWXT (Highland Nuclear)

Other Key Players: WSP (quality assurance oversight); Golder-a WSP company (geotechnical services/environmental engineering); Deloitte; AGAT Labs (analytical testing); Burns & McDonnell (integrated project controls support); Sargent & Lundy (integrated project management & project controls support); Deloitte

Suppliers: BWXT Canada Inc. (steam generators, feeder fabrication, end fittings, liners, and flow elements); Nu-Tech Precision Metals (zirconium alloy pressure tubes); Cameco Fuel Manufacturing (calandria tubes and annulus spacers); Brotech Precision (shield plugs); BC Instruments (Positioning assemblies, feeder hubs), Framatome (PHT chemical decontamination skid); Laker Energy Products (end fittings, liners, and flow elements)

Legal: Osler (lead counsel); Torys (acting for the lender) **Funding:** Private

Substantial Completion: 2033

* All capital cost is disclosed by TC Energy

In December of 2015, Bruce Power announced its plan to refurbish six of its eight nuclear reactors at its plant near Kincardine, Ont. The project, originally scheduled to commence in 2016, was postponed until 2020 based on the usable life of the reactors.

The eight reactors produce 6,550 megawatts of power annually, approximately 30 per cent of Ontario's current energy usage. Bruce Power's operations support 22,000 direct and indirect jobs annually, generating about \$4 billion in annual economic benefits in communities throughout the province. The agreement between the Ontario government and Bruce Power has achieved \$1.7 billion in savings for electricity customers when compared to the forecast in Ontario's 2013 Long-Term Energy Plan (2013 LTEP). This means a reduction in forecast household electricity bills by about \$66 each year over the next decade, according to the Ontario government.

Bruce Power is investing approximately \$13 billion of its own funds to cover the costs associated with the refurbishment and agrees to take full risk of cost overruns on refurbishments of the six nuclear units. In October 2022, the refurbishment of the first reactor (MCR Unit 6) is progressing on time and on budget. So far, the project has completed the inspection of the reactor vessel and installation of upper feeders. Bruce Power has started assembly and installation of the fuel channel assemblies, which will be followed by installation of lower feeders. The Steam Generator installation is substantially complete with demobilization in progress. Preparations for moderator fill are under way. The start of refueling is expected in O2 of 2023, which would be a key milestone for this refurbishment project. Unit 6 will return to service in 2023. (All capital cost is disclosed by TC Energy).

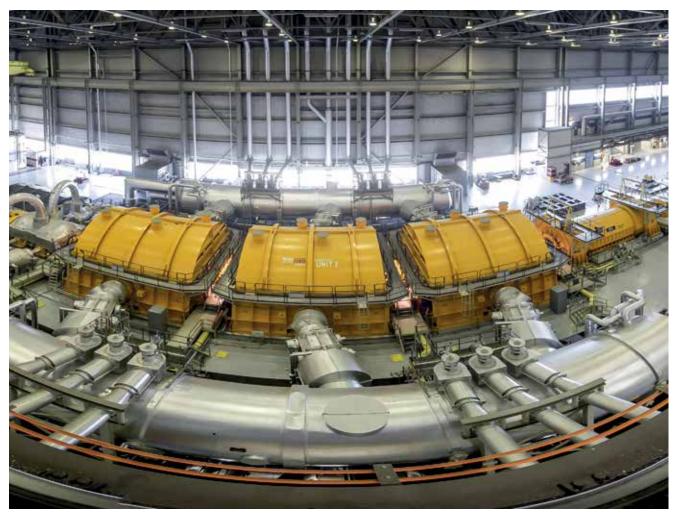
In parallel with Unit 6 refurbishment, preparations are ongoing for refurbishment of the next units. Preparation for construction phase of Unit 3 MCR is ongoing with Breaker Open scheduled for March 1, 2023.

Bruce Power brucepower.com Innovation at work POWERING ONTARIO **FORWARD** BY PLAYING A CRITICAL ROLE IN CANADA'S **CLEAN ENERGY FUTURE** Bruce Power's Life-Extension program continues to play a key role in stimulating the economy and will ensure a steady global supply of medical isotopes and a reliable source of clean electricity that will make significant contributions to a Net Zero Ontario and Canada.



Darlington Nuclear Refurbishment \$12.8 billion





2022 Rank: 4

Location: Clarington, Ont.

Owner: Nalcor Energy; Ontario Power Generation

Project/Construction Manager: Aecon Group Inc./SNC-Lavalin JV (execution phase of the retube and feeder replacement)

Engineer: Wood-a WSP company (consulting)

Contractor: Generation: Andritz Hydro Canada, Astaldi Canada, Barnard-Pennecon JV

Transmission: GE Energy (formerly Alstom Grid Canada and

Alstom Renewable Power Canada), Andritz Hydro Canada, H.J. O'Connell Construction, Valard Construction

Other Key Players: GE Power; ABB; Amec Foster Wheeler; Deloitte; Kiewit; Black & McDonald; Tetra Tech; BDI Canada; Burns & McDonnell/Modus (Independant Project Oversight); Cameco (calandria tubes and annulus spacers); Alstom AA6Power & Transport Canada Inc. (turbine generator refurbishment); Hatch (engineering services); Armtec; Comtech (Project Control Consultant Services); Golder-a WSP company (geotechnical services/environmental engineering) **Supplier:** DECAST Ltd.; Laker Energy (nuclear components); Nu-Tech Precision Metals (calandria tubes)

Legal: Blake, Cassels & Graydon; Torys (acting for the owner) Funding: Public

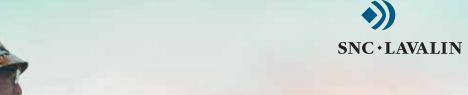
Substantial Completion: 2026

The commencement of the execution phase marks the joint venture's (JV) successful delivery of the definition phase (2012-2016) of the project, which included the construction of a full-scale reactor mock-up facility to simulate key elements of the refurbishment work and the testing of specialized tooling and to help prepare a comprehensive estimate and schedule for the project.

A \$35-million reactor vault mock-up and re-tube and feeder replacement (RFR) was completed as part of the preliminary phase of the refurbishment project. Led by SNC Lavalin Nuclear (SLN) and Aecon Nuclear, the mock-up helped to train the team for feeder and fuel channel replacements to be undertaken as part of the overall refurbishment project.

The execution phase of the project will involve the replacement of main reactor components using tools and methods that were developed and tested during the project's definition phase, carried out by the JV.

Each of the four Darlington Candu reactors will be taken out of service sequentially for approximately three years to allow for the replacement of fuel channels, feeder pipes, calandria tubes and end fittings. The overall project is scheduled for 112 months.



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TRANSPORTATION



NUCLEAR



DEFENSE



WATER



INDUSTRIAL & MINING



POWER & RENEWABLES



BUILDING &











Eglinton Crosstown LRT \$12.571 billion





2022 Rank: 5

Location: Toronto, Ont.

Owner: Metrolinx

Procurement Agent: Infrastructure Ontario

DBFM Team: Crosslinx Transit Solutions—ACS Infrastructure Canada, Aecon, EllisDon, SNC-Lavalin, and Dragados Canada Contractor: Design-Build JV: Aecon Infrastructure Management, Dragados Canada, EllisDon, and SNC-Lavalin Constructors (Pacific)

Engineer: Jacobs and 4 Transit—WSP (project management, GIS), Hatch, and Parsons (consulting engineer, technical advisor, construction oversight); AECOM (consulting engineer, preliminary planning/study, design); Wood-a WSP company (consulting/environmental); LEA (design)

Architect: Station Architects; IBI Group; NORR Limited Architect & Engineers; DIALOG; Daoust Lestage

Other Key Players: AECOM (consulting engineer, preliminary planning/study, design); Aon (risk advisor); Arup (preliminary design work); BTY Group (independent certifier); Caterpillar; Entro; Entuitive (structural eng. consultant); EY (advising gov't.); EXP (instrumentation and monitoring); Golder-a WSP company (geotechnical services); Hanscomb (preliminary and concept designers' cost consultant for 7 stations); Infrastructure Ontario; INTECH (insurance advisor); McCormick Rankin; Munro (concrete); Norton Rose Fulbright; Obayashi Canada; Kenny Construction; Kenaidan Contracting; Technicore (contractors); URS/Parsons JV (systems design); CRH Canada (cement supply); Dufferin Construction (prep work); McMillen Jacobs Associates (independent verifier); Mott MacDonald (track design review and tunnel construction management); Englobe (geotechnical studies); CIMA+ (traffic mgmt. and road safety audits); Morrison Hershfield (transit operations and maintenance advisory services); GHD (traffic mgmt., site civil support); AGAT Labs; Comtech (consulting services); Deloitte; Geosolv; HKA **Supplier:** Bombardier (vehicle); DECAST Ltd. (precast tunnel liner segments); CRH Canada (cement); Canam Group (steel

Financiers/Banks: National Bank Financial and Scotiabank

Global Banking and Markets (underwriters); Alberta Treasury Branches; Caisse Centrale Desjardins; Bank of Nova Scotia; Bank of Tokyo-Mitsubishi UFJ; and Toronto-Dominion Bank (mandate lead arrangers); BMO Capital Markets (financial advisor) Architects: (Station Architects) IBI Group; NORR Limited Architect & Engineers; DIALOG; Daoust Lestage Management Consultants: Infrastructure Ontario; Metrolinx; SEG Management Consultants (fairness advisor); EY (transac-

Legal: Blake, Cassels & Graydon (Metrolinx legal advisor); Fasken Martineau DuMoulin (advising lenders to consortium); Borden Ladner Gervais (legal advisor); DLA Piper (Canada); Norton Rose Fulbright; Stikeman Elliott LLP

tion advisor); BMO Capital Markets (financial advisor); Aon

Funding: P3

Substantial Completion: 2023

Risk Solutions (insurance advisor)

This light-rail transit line will run along Toronto's Eglinton Avenue between Mount Dennis (Weston Road) and Kennedy Station. Part of the Government of Ontario's light-rail transit plan for the city, this 19-kilometre corridor will include an 11-kilometre underground portion between Keele Street and Laird Drive. When running at street level, the line will carry passengers in dedicated right-of-way transit lanes separate from regular traffic with priority signaling at intersections. Travelling at an average speed of 28 km/h, it will link to 54 bus routes, three subway stations, and various GO Transit lines. The capacity of the LRT vehicles is 15,000 passengers per hour per direction, with the flexibility to easily remove or add cars. Projected ridership is 5,400 passengers per hour in the peak direction by 2031. The final pieces of trackwork for the project were being installed during the fall of 2021. Installation of the overhead catenary system (the wires that power the trains), train signals, communications systems and other features to enable safe train movement continued in 2022 and the rail now runs continuously from the Maintenance and Storage Facility, located on the site of the former Kodak lands, to Kennedy Station.





Ontario Line \$10.9 billion





2022 Rank: 6

Location: Toronto, Ont.

Owner: Metrolinx

Procurement Agent: Infrastructure Ontario

Rolling Stock, Systems, Operations and Maintenance

(RSSOM): Connect 6ix

Applicant Lead: Plenary Americas, Hitachi Rail, Webuild Group (Salini Impreglio Canada Holding Inc.), Transdev Canada Inc.

Design Team: Hitachi Rail, IBI Group Professional Services (Canada) Inc.

Construction Team: Hitachi Rail, Webuild Group (Astaldi Canada Design & Construction Inc. and Salini Impreglio Civil Works Inc.), NGE Contracting Inc.

Operations, Maintenance and Rehabilitation

Team: Hitachi Rail, Transdev Canada Inc.

Financial Advisors: National Bank Financial Inc.,

Sumitomo Mitsui Banking Corporation

Other Key Players: Aon (risk advisor); Golder-a WSP company (geotechnical studies); Hanscomb (cost consultant); EY (mgmt. consultant); Jacobs; Comtech; HDR (technical advisory services); Hatch; Wood-a WSP company (environmental engineer); Entuitive; WSP (TTC Operators representative)

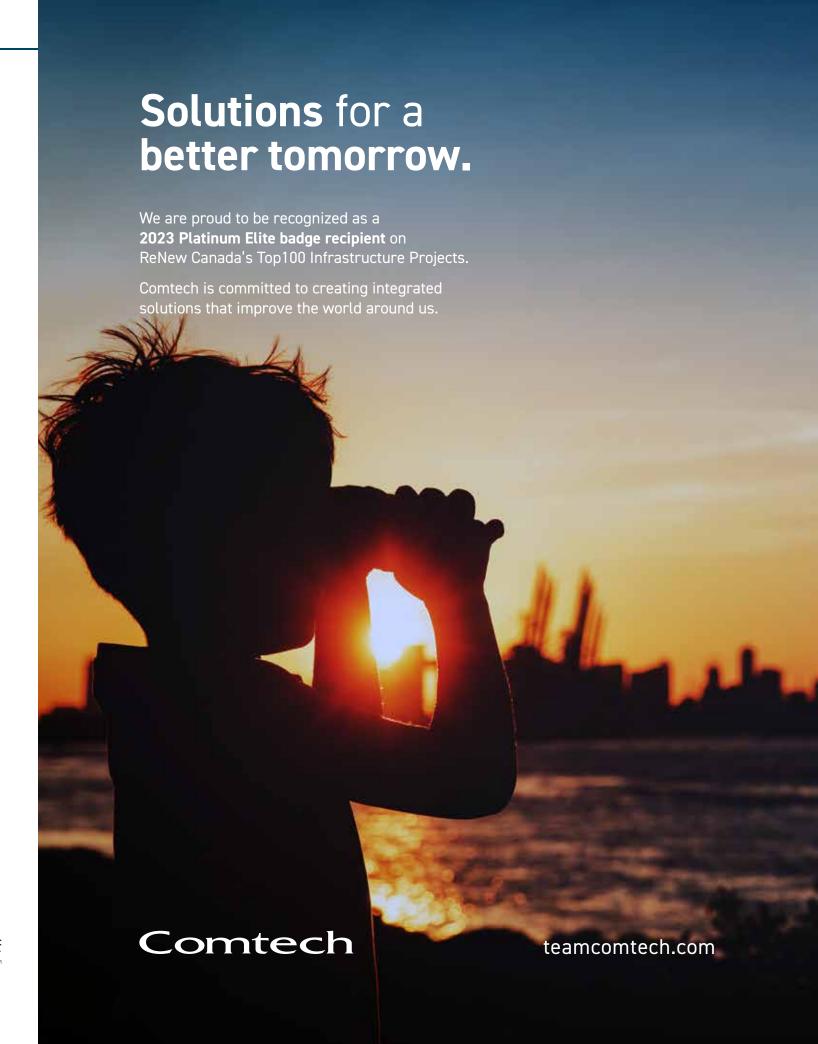
Suppliers: DECAST Funding: Public

Substantial Completion: 2031

The Ontario Line is a 15.6-kilometre stand-alone rapid transit line that will connect the Ontario Science Centre to Exhibition/ Ontario Place. Over half of the route is planned to run underground through new tunnels, with the remainder running along elevated and at-grade rail corridor sections of track. Fifteen stations are proposed, with numerous connections to the broader transit network, including GO Transit rail services, the Toronto Transit Commission's subway Lines 1 and 2, the future Line 5 (Eglinton Crosstown LRT), as well as numerous bus and streetcar routes. The Ontario Line is one of four priority transit projects announced by the province in 2019 for the Greater Toronto and Hamilton Area.

In November 2022, Infrastructure Ontario and Metrolinx awarded a contract to Connect 6ix valued at \$9B (\$2.3B for capital costs and \$6.7B for short-term construction financing and transaction costs, train costs and 30-year operations and maintenance, lifecycle, and long-term financing). The Connect 6ix team will design, build, finance, operate and maintain the Ontario Line Rolling Stock, Systems, Operations and Maintenance (RS-SOM) package for a 30-year term.

The team will begin mobilizing their design and construction crews, with work to commence in 2023. The project is anticipated to be completed in 2031. Once all the civil infrastructure elements and systems from Ontario Line North and South segments have been completed, integrated and certified, Connect 6ix will then begin operating and maintaining the Ontario Line for a 30-year term.







GO Expansion Projects – Early Works \$10.513 billion







2022 Rank: 7

Location: Greater Toronto and Hamilton Area Owner: Metrolinx

DBF Team (Highway 401 Rail Tunnel): Toronto Tunnel Partners

- Applicant Lead: EllisDon Capital Inc. and STRABAG Inc.
- Construction: EllisDon Civil Ltd. and STRABAG Inc.
- Design: WSP Canada Inc., Dr. Sauer & Partners, Amec Foster Wheeler (Wood)
- Financial Advisor: EllisDon Capital Inc. and STRABAG Inc. DBF Team (Davenport Diamond Grade Separation project):
- **Graham Commuter Rail Solutions** • Applicant Lead: Graham Capital Partners LP and Gracorp Cap-
- · Construction: Graham Construction and Engineering LP
- · Design: LEA Consulting Ltd. as Design Lead; EXP; International Bridge Technologies; Brown & Storey Architects Inc.
- Financial Advisor: Graham Capital Partners LP

ital Ltd.; Graham Construction and Engineering LP

AllianceTeam (Union Station Enhancement project): ONTrack

- Constructors: Kiewit-Alberici Union General Partnership
- Designers: WSP Canada Inc.
- Signalling Work: Mass. Electric Construction Canada Co.

Contractor: EllisDon (Dufferin/Queen bridge); Kenaidan/Cole Engineering (rapid pedestrian tunnels)

Engineer: Wood-a WSP company (consulting); Parsons; Hatch;

Other Key Players: 4-Transit JV (technical advisory services): Hatch, Parsons, WSP; CIMA+ (utilities relocation); Morrison Hershfield (owner's technical advisors team (sub-consultant to Gannett Fleming); Comtech (program/project consulting); Jacobs (program mgmt.); A.W. Hooker Associates Ltd. (cost consultant); Golder-a WSP company (environmental services); INTECH Risk Management, CIMA+; Deloitte (transaction advisor); Aon (risk advisor); Comtech (mgmt. consulting services); Arcadis (environmental services); DECAST; Hemmera; Entuitive

Legal: Borden Ladner Gervais

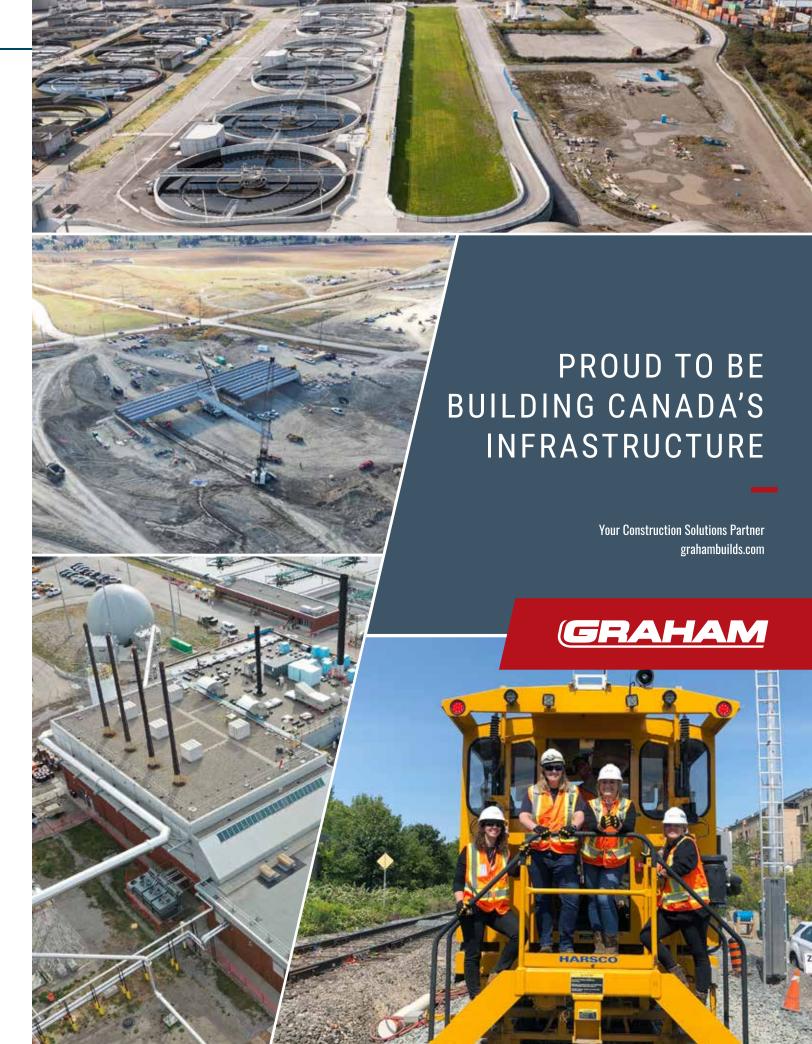
Funding: Public

Substantial Completion: 2025

The Early Works portion of the GO Expansion project is one of three blocks of works to be done to accommodate two-way, allday transit throughout the GTHA corridor. According to the Fall 2018 business case, this work represents: "including both oncorridor and off-corridor civil works such as new track, station improvements, grade separations and utility relocations, that are either enabling infrastructure for future service increases, needed state of good repair improvements or components that can be delivered early, to reduce schedule risk for the program."

There are over 50 individual projects included in the early works program, including 40 smaller projects delivered as Design-Build or Design-Bid-Build, along with 12 larger projects delivered as Build-Finance and Design-Build-Finance. The latter includes the Davenport Diamond Rail Grade Separation Project, for which the winning bidder was selected in July 2019, and the Highway 401 Rail Tunnel, which began construction in March 2019, and the Stouffville Corridor Stations Improvement project.

The program also includes the Union Station Enhancement project, which will see construction of a new South Concourse, track expansion east of the station and replacement of the 90-year-old signaling system with new state-of-the-art signals, communications, power supply, CCTV, and SCADA systems.





Iona Island Wastewater Treatment Plant Projects \$9.9 billion





2022 Rank: 8

Location: Richmond, B.C. Owner: Metro Vancouver

Program Management Consultant: Stantec

Engineer: AECOM, Jacobs

Architect: Space2Place, Local Practice

Other Key Players: Musqueam Indian Band; WSP (geotechnical

services/permitting) Funding: Public

Substantial Completion: 2035

Phase 1 Early and Enabling Works: 2026

Phase 2 Treatment Plant and Related Works: 2026+

The existing Iona Island Wastewater Treatment Plant provides primary treatment for communities in Vancouver, the UBC Endowment Lands, and parts of Burnaby and Richmond. As the facility reaches the end of its service life, Metro Vancouver has a once-in-a-lifetime opportunity to positively contribute to the health and well-being of people, as well as the ecological health and biodiversity of the Fraser River Estuary and the Salish Sea. The plant upgrade will provide tertiary-level treatment and meet the latest seismic standards, account for future sea level rise, and incorporate cutting-edge technologies for resource and energy recovery, greenhouse gas reductions, odour reduction and energy efficiency. Metro Vancouver is working to ensure the new facility contributes positively to the community and is working closely with stakeholders and 14 local First Nations, particularly the Musqueam Indian Band. The upgrade project also includes a suite of 20 ecological projects to enhance freshwater wetland habitat for birds and

Image: Conceptual rendering (2022) is subject to refinement.

Project Funding by Sector

ENERGY	TRANSIT	TRANSPORTATION	BUILDINGS	OTHER
NUCLEAR	LRT	HIGHWAY	HEALTH CARE	WATER/WASTEWATER
\$25.8 BILLION	\$61.6 BILLION	\$16.4 BILLION	\$26.6 BILLION	\$20.39 BILLION
HYDROELECTRIC	RAIL	BRIDGE	PUBLIC SPACES	REMEDIATION
\$19.7 BILLION	\$29.9 BILLION	\$7.5 BILLION	\$15.3 BILLION	\$2.91 BILLION
TRANSMISSION	SUBWAY	PORT	SOCIAL INFRASTRUCTURE	COMMUNICATIONS
\$2.9 BILLION	\$20.7 BILLION	\$3.4 BILLION	\$2.2 BILLION	\$4.65 BILLION
GAS \$2.3 BILLION	BRT \$8.3 BILLION		MILITARY \$1.6 BILLION	
TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
\$50.66 BILLION	\$120.56 BILLION	\$28.20 BILLION	\$45.40 BILLION	\$28 BILLION

2023 TOP100 TOTAL \$273 BILLION

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TTC Vehicles Program \$7.175 billion





2022 Rank: 10

Location: Toronto, Ont.

Owner: Toronto Transit Commission (TTC)

Other Key Players: Entuitive; WSP

Suppliers: Alstom SA; New Flyer Industries Inc; Proterra Inc.; BYD Canada Co. Ltd.; Creative Carriage Ltd.; Ontario Power

Generation; Toronto Hydro

Funding: Public

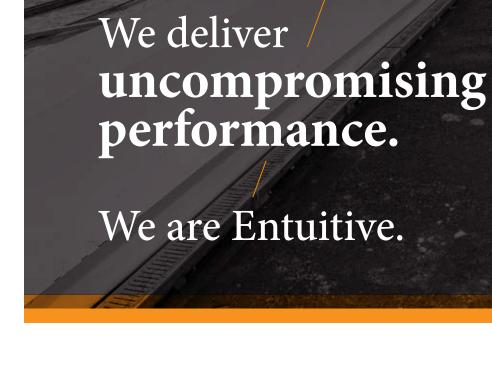
Substantial Completion: 2022-2036

The Toronto Transit Commission is upgrading its fleet, including 264 new streetcars (\$1.613 billion), new Wheel-Trans vehicles (\$363 million) as well as hybrid and electric buses (\$4.413 billion). An electrification program (\$766 million) covers the electrification infrastructure to support the charging of electric buses according to the Green Bus Technology Plan approved by

In 2022 the program aims to complete design for Eglinton, Wilson and Malvern garages and phase two construction at Wilson and Birchmount garages. By 2024, the TTC will complete installation of 60 e-chargers at three TTC garages (Arrow Road, Mt. Dennis and Eglinton) and plans electrification of the entire fleet by 2036. For the electric and hybrid bus projects, the TTC aims to deliver the pilot vehicle for the next round of procurement and start full production delivery in 2022. The Wheel-Trans project plans to deliver 109 seven-metre Wheel-Trans buses in 2022, as well as start design and award the contract for the next round of six-metre buses.







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10

Réseau express métropolitain \$6.9 billion







2022 Rank: 11
Location: Montreal, Que.
Owner: CDPQ Infra
Contractor:

• EPC contract: Groupe NouvLR— SNC Lavalin Grands Projets Inc.; Dragados Canada Inc.; Groupe Aecon Québec Ltée; Pomerleau Inc.; EBC Inc.

- RSSOM Contract: Groupe des Partenaires pour la Mobilité des Montréalais—Alstom Transport Canada Inc.; SNC-Lavalin O&M Inc.
- Conception: SNC Lavalin Inc.; Aecom Consultants Inc. **Engineer:** CIMA+; Hatch; Parsons (consulting)

Design: Lemay; Bisson Fortin; Perkins+Will; Provencher Roy Other Key Players: Hanscomb (advisory services for design, engineering, and costing); EXP (feasibility and diligence studies); WSP (geotechnical); Aon (risk advisor); GHD (geotechnical/testing); INTECH Risk Management; Deloitte (due diligence advisor); Englobe; Canam Group; Jacobs (independent certifier)

Legal: Norton Rose Fulbright (advising CDPQ Infra); Lavery de Billy (advising CDPQ Infra); Borden Ladner Gervais (advised NouvLR); Davies Ward Phillips & Vineberg (advised PMM); Stein Monast (advised the Quebec Government); Fasken Martineau DuMoulin (advisor for ARTM)

Funding: Public-Private

- CDPQ Infra \$3.63 billion
- Government of Quebec \$1.28 billion
- Government of Canada (through the Canada Infrastructure Bank) - \$1.28 billion
- Hydro Quebec \$295 million

• ARTM - \$512 million **Substantial Completion:** 2024

The Réseau express metropolitain (REM) will be a new integrated network linking downtown Montreal, South Shore, West Island, North Shore, and the airport. Once completed, the REM will be the fourth largest automated transportation system in the world after Singapore (82 kilometres), Dubai (80 km) and Vancouver (68 km). For the metropolitan area, the REM also represents the largest public transportation infrastructure since the Montreal metro, inaugurated in 1966.

Combined with existing transportation networks (metro, trains and buses), the REM opens a new era of public transit development in the Greater Montreal area:

- 26 stations—67 kilometers—20 hours a day—7 days a week
- This constitutes Québec's first "public-public" partnership project

Despite construction delays due to COVID-19, progress has been made along the entire length of the project. This includes the construction of a new North Shore bridge using the counterweight launching methodology.

In 2002, the project reached two important milestones in terms of construction for the project: Full completion of the construction of the 16-km-aerial structure for the REM by the two launching gantries and the digging with the tunnel-boring machine (TBM) of the tunnel to the airport (2.5-kms); in July, a REM car crossed the Champlain bridge for the first time; a couple weeks before this major milestone, full electrification of the segment between the South Shore and Central Station was completed.

REM/NouvLR, Thierry DuBois



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Montreal Metro Blue Line Extension \$6.4 billion









2022 Rank: 19

Location: Montreal, Que.

Owner: Société de transport de Montréal (STM)

Project Manager: Blue Line Project Office (Société de transport

Project Partners: Autorité régionale de transport métropolitain (ARTM), ministère des Transports du Québec (MTQ), Société québécoise des infrastructures (SQI) and City of Montréal Engineer: AECOM; EXP; Tetra Tech; SNC-Lavalin, Stantec

Architect: ACDF architecture inc., Barin, Jodoin Lamarre, Pratte, Lemay Co inc., Les architectes FABG inc., St-Gelais Montminy et associés

Other Key Players: EY (business case advisor); Englobe; Brodeur Frenette (risk management expert advisor); Wood-a WSP company (geotechnical studies) Funding: Public

Substantial Completion: 2029

The Blue Line Extension project will add approximately six kilometres of track and five new stations to the current 12-station Blue Line, one of four Metro lines that runs through the Greater Montreal Area. The extension will run along Jean-Talon Street, ending east of Highway 25. In summer 2022, the STM received authorization from the Quebec government to move forward with the execution phase. Therefore, the STM launched its call for tenders for the tunnel boring machine in fall 2022.

This contract is scheduled to be awarded in the second half of 2023.





Gordie Howe International Bridge \$5.7 billion

Location: Windsor, Ont. to Detroit, Mich.

Owner: Windsor-Detroit Bridge Authority (WDBA)

Project/Construction Manager: Deloitte

DBFOM Team: Bridging North America—ACS Infrastructure Canada Inc.; Fluor Canada Ltd.; Aecon Concessions; RBC Dominion Securities Inc.; AECOM; Carlos Fernandez Casado S.L/FHECOR Ingenieros Consultores, S.A.; Moriyama and Teshima Architects; Smith-Miller + Hawkinson Architects LLP; Dragados Canada Inc.; Aecon Infrastructure Management Inc.; Turner Construction Company; Aecon O&M, a division of Aecon Construction Group Inc.; DBI Services, LLC; URS Federal Services, Inc. (AECOM)

Engineer: Parsons (owner's engineer)

Other Key Players: EY (advising team); Golder-a WSP company (geotech./foundation engineering); Hanscomb (owner's cost consultant and special advisor); Kasian (PDC team); LeighFisher (lender's technical advisor); INTECH Risk Management (insurance advisor); CIMA+ (transmission relocation design); WSP (environmental services); Aon (risk advisor); Parsons (bridge technical advisor); Tetra Tech; Rider Levett Bucknall; A.W. Hooker Associates Ltd. (cost consultant); Canam Group; Englobe; EXP (engineering and testing services); Wood-a WSP company (materials tester)

Supplier: Entro (signage and wayfinding)

Legal: Fasken Martineau DuMoulin (transaction advisor); Blake, Cassels & Graydon (legal advisor to the proponent) Funding: P3

Substantial Completion: 2024

This crossing is the largest and most ambitious binational border infrastructure project along the Canada-United States border. It includes a new six-lane bridge across the Detroit River, associated border inspection plazas, and connections to the freeway systems in Ontario and Michigan. This project will provide a new alternative crossing for this trade corridor.

The Canada-Michigan Crossing Agreement, signed in June 2012 by Canada and Michigan, provided a framework for the construction, financing, operation, and maintenance of the new publicly owned bridge. The agreement called for the establishment of both a crossing authority, known as the WDBA, to deliver, procure, and fund the project through a P3 and an international authority to oversee the project procurement and compliance with the agreement.

Work on all four components of the project is being conducted simultaneously: Canada and U.S. Points of Entry, the Michigan I-75 Interchange, and the bridge itself. Current work including earthworks and utility locations at the Points of Entry and the start of construction on the tower footings.

Activity over the past year has focused on the tower construction on both sides of the border. At present, the two towers (note that towers are being built on land) have reached approximately 150 metres. Once complete, the towers will reach 220 metres in height. Work continues on the other components of the project, the Canadian and US Ports of Entry and the Michigan Interchange. Construction is well underway at the ports of entry, including the primary inspection lanes and toll booth canopies in Canada and the Secondary inspection building on the U.S. side.



Hurontario LRT \$5.632 billion



2022 Rank: 13

Location: Mississauga and Brampton, Ont.

Owner: Metrolinx

Project Agent: Infrastructure Ontario

DBFOM Team: Mobilinx Hurontario General Partnership Applicant Lead: John Laing, Astaldi, Hitachi, Transdev, Amico Concessions, Salini Impregilo

Construction: Astaldi, Hitachi, Amico, Bot, Salini Impregilo Design: IBI Group, Hitachi, Morrison Hershfield, Arcadis, Daoust Lestage, EXP

Operation Maintenance & Rehabilitation Provider: Transdev, Hitachi, Astaldi, Salini Impregilo

Financial Advisor: National Bank, HSBC

Engineer: SNC-Lavalin (project lead); Steer Davies Gleave (preliminary engineering); Stantec (design); WSP (consulting) Other Key Players: DIALOG (urban design); Dufferin Construction; Golder-a WSP company (preliminary geotechnical services); Hanscomb (preliminary design engineer's cost consultant); Hatch; LEA Group (ITS); Aon (owner advisor and construction insurance broker); AECOM (owner's representative/technical advisor); EY (financial and transaction advisory); Morrison Hershfield (transit O&M advisors); AGAT Labs; Comtech (program/project consulting);

DECAST; RLB; Jacobs (program mgmt.); INTECH Risk Management; Arcadis (environmental services); Deloitte (financial advisor); Englobe; HKA; INFRATA (managing consultant)

Supplier: DECAST (precast infrastructure)

Legal: Borden Ladner Gervais (legal advisor); Torys (acted for lender); McMillan LLP (for the proponent)

Funding: Public

Substantial Completion: 2024

The Hurontario Light Rail Transit (LRT) project will bring 18 kilometres of fast, reliable, rapid transit to the cities of Mississauga and Brampton along the Hurontario corridor. New, modern light rail vehicles will travel in a dedicated right-of-way and serve 19 stops with connections to GO Transit's Milton and Lakeshore West rail lines, Mississauga MiWay, Brampton Züm, and the Mississauga Transitway BRT. Funded through a \$1.4 billion commitment from the Province of Ontario, the Hurontario LRT is a signature project of the Moving Ontario Forward plan.

Early works on the Hurontario LRT project continue, with utility relocations including new watermains, as well as road widening and bus platform relocations—all tasks to prepare for rail and station construction now visible. Plus, excavation for the 'push box' at QEW and Port Credit locations is completed. In addition, the operations, maintenance and storage facility under construction is making progress; and prep work for the installation of track is now well underway beside the facility.

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Scarborough Subway Extension \$5.5 billion



2022 Rank: 14

Location: Scarborough, Ont.

Owner: Metrolinx

DBF Team (Advance Tunnel contract): Strabag Scarborough Project Inc.

- Construction Team: Strabag Inc.
- Design Team: ARUP Canada Inc., Brian Isherwood & Associates Ltd.
- Financial Advisor: Strabag Inc.

Stations, Rails & Systems: Scarborough Transit Connect Applicant Leads: Aecon Infrastructure Management Inc., FCC Construction S.A.

Design Prime Team Member: Mott MacDonald Canada Ltd. Construction Prime Team Members: Aecon Infrastructure Management Inc., FCC Construction S.A.

Engineer: OneT+ (Gannett Fleming, IBI Group, GHD) Design: Hatch (tunnel design); WSP (systems design and management); AECOM (station design)

Environmental Services: Englobe

Other Key Players: Jacobs (quality mgmt. and risk assessment); Comtech; WSP (operator's representative); Wood-a WSP company (consulting engineer/geotechnical studies) Funding: P3



Substantial Completion: 2026

The Scarborough Subway Extension is a 7.8-km extension of TTC's Line 2 Bloor-Danforth Subway, from the existing Kennedy Station northeast to McCowan Road/Sheppard Avenue. The line will include three new stations at Lawrence Avenue and McCowan Road, Scarborough Centre and a terminal station at McCowan Road and Sheppard Avenue. Construction for the Scarborough Subway Extension began in the spring of 2021 at the corner of Sheppard Avenue and McCowan Road with the excavation of the tunnel launch shaft, which will be about 80 metres long, 28 metres wide, and 28 metres deep.

Centre Block Rehablitation Project \$5 billion

2022 Rank: 16

Location: Ottawa, Ont.

Owner: Government of Canada

Project/Construction Manager: PCL/EllisDon JV Architect: Arcop (WSP)/Fournier Gersovitz Moss & Associates

Other Key Players: Turner & Townsend (risk management services); Colliers Project Leaders Inc. and Tiree Facility Solutions (project management support services for Centre Block); Atwell-Morin (northern ventilation towers rehabilitation for Centre Block); Golder-a WSP company (geotechnical studies); Morrison Hershfield (code consulting); Engineering Harmonics; EY (business case advisor); Aon (risk advisor); Kasian, Moriyama & Teshima Architects (West Memorial Building architectural and interior design); Hanscomb (cost consultant)

Funding: Public

Substantial Completion: 2030-31

The Government of Canada is undertaking a comprehensive rehabilitation of the Parliament buildings in Ottawa. Work is underway to restore and modernize the Centre Block, the most iconic and impressive of the Parliament buildings. It will undergo extensive interior and exterior upgrades.

The Centre Block Rehabilitation Project is the largest, most complex heritage rehabilitation project ever seen in Canada and one of the largest in the world. Public Services and Procurement Canada (PSPC) is using innovative approaches and technologies throughout the project. When the Centre Block reopens, it will be ready to meet the needs of a 21st-century



Parliament for years to come.

Today, the Centre Block is a busy construction site with activity inside and out:

- Excavation to accommodate the new Parliament Welcome Centre has begun
- · Demolition and abatement activities inside the Centre Block are well underway
- PSPC is restoring the building's heritage masonry and ensuring the structure meets modern seismic standards

In June 2021, PSPC unveiled the design, scope, and anticipated timelines of the rehabilitation project. The current cost estimate is between \$4.5 and \$5 billion, and the targeted completion date is between 2030 and 2031. The Centre Block is estimated to reopen one year later. Overall, the project remains within scope and is progressing on time and within budget.

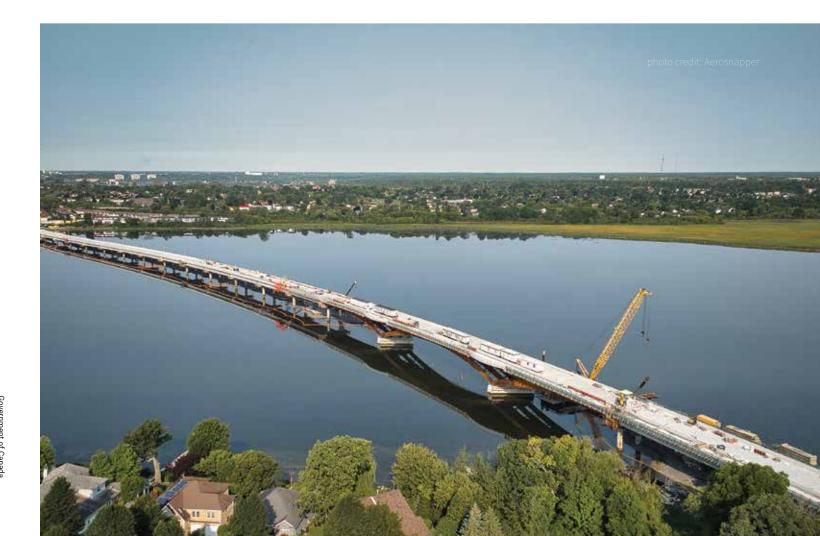


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Green Line LRT \$4.9 billion



2022 Rank: 15

Location: Calgary, Alta.

Owner: City of Calgary

Delivery Team: CSIX Partners

- SNC-Lavalin
- Aldea Services Inc
- Altus Group
- Mott MacDonald
- Turner & Townsend

Engineer: Hatch; Wood-a WSP company (consulting); Tetra Tech (design)

Architect: Sturgess Architecture, IBI Group (consulting) Supplier: Light Rail Vehicles (LRVs)—CAF (Construcciones y Auxiliar de Ferrocarriles)

Other Key Players: Colliers Project Leaders; CIMA+; RLB; A.W. Hooker Associates Ltd. (cost consultant); INTECH Risk Management; Deloitte (pre-procurement assessment); Aon

Legal: Blake, Cassels & Graydon (advising the City of Calgary); Borden Ladner Gervais

Funding: Public

• Federal: \$1.64 billion

• Provincial: \$1.7 billion

• Municipal: \$1.56 billion **Substantial Completion: 2027**

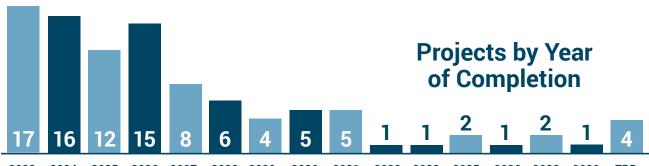
The Green Line Light Rail Transit system will add 28 stations and 46 kilometres of track to Calgary's existing LRT system. The line will run from 16th Avenue north to 126 Avenue SE, with an underground tunnel for the downtown portion of the system.



The initial plans were for the Green Line to be constructed as a bus-only transitway, but was later converted to LRT as funding

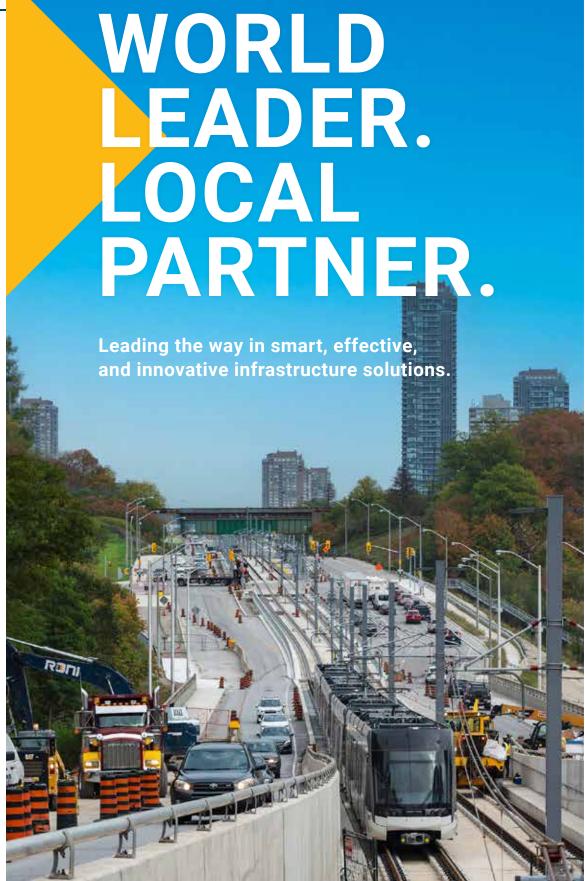
In November 2022, the Green Line Board selected CSIX Partners as the Delivery Partner, who will supplement the Green Line team in support of delivering Phase 1 across a range of project functions, including commercial management, technical support, project controls, and construction management.

As well, in September 2022, the Board approved the release of the Request for Proposals (RFP) to select a proponent to design, construct and finance Phase 1, from Shepard to Eau Claire, of the Green Line LRT. The RFP was released to the two proponent teams, Bow Transit Connectors (Barnard Constructors of Canada LP, Flatiron Constructors Canada, and WSP Canada) and City Link Partners (Aecon Infrastructure Management, Dragados Canada, Acciona Infrastructure Canada, Parsons, and AECOM Canada).





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Eglinton Crosstown West Extension \$4.7 billion



2022 Rank: 17

Location: Toronto, Ont.

Owner: Metrolinx

Project/Construction Manager: Infrastructure Ontario **DBF Team (Advance tunnel contract):** West End Connectors

- Applicant Lead: Aecon Infrastructure Management Inc.,
- Dragados Canada Inc., Ghella Canada Ltd. • Construction Team: Aecon Infrastructure Management Inc., Dragados Canada Inc., Ghella Canada Ltd.
- · Design: TYPSA Inc., EXP Services Inc., Dr. G. Sauer & Partners Corporation, Pedelta Canada Inc.
- Financial Advisor: ACS Infrastructure Canada, Aecon Concessions, Scotiabank Capital, Ghella Investments & Partnerships Engineer: ARUP Canada Inc.; LEA (engineer design); Morrison Hershfield (consulting)

Other Key Players: Golder-a WSP company (geotechnical studies); Jacobs (document control, contract administration, schedule, quality mgmt. and risk assessment); WSP (TTC Operators Representative); INFRATA (managing consultant) **Supplier:** DECAST

Funding: P3

Substantial Completion: 2030-2031

The Eglinton Crosstown West Extension is an approximately 9.2-kilometre extension of the Eglinton Crosstown LRT (future Line 5), from Mount Dennis to Renforth Drive. Metrolinx is actively collaborating with the GTAA and municipal partners on the proposed alignment from Renforth Drive to the airport, which considers the GTAA's plans for a Regional Transit Centre.



Tunnelling is one of the first phases of work for the project.

The project is being delivered in four separate contracts: • Advance Tunnelling DBF contract awarded to West End Con-

- nectors in May 2021 • Second Advance Tunnelling DBF contract currently in pro-
- Elevated Guideway DB contract currently in procurement
- Stations and remaining works (procurement dates TBD)



Ottawa LRT – Stage 2 \$4.675 billion



2022 Rank: 18 Location: Ottawa, Ont. Owner: City of Ottawa

Engineer: STV Group, AECOM, Parsons and Morrison Hershfield (owner's engineer); Kiewit, Vinci, WSP, and Hatch (Confederation Line design build); SNC Lavalin (Trillium Line design build maintain); EXP; Golder-a WSP company **Environmental Services:** WSP (environmental lead)

Other Key Players: Rideau Transit Maintenance (Confederation Line maintainer); Aon (owner's advisor and construction insurance broker); Deloitte (owner's advisor); A.W. Hooker Associates Ltd. (Independent Certifier); SENER (Independent Safety Auditor); INFRATA (managing consultant)

Suppliers: Thales (Confederation Line signaling technology); Siemens (Trillium Line signaling technology); Alstom (Confederation Line vehicles); Stadler (Trillium Line vehicles)

Legal: Borden Ladner Gervais, Norton Rose Fulbright (owner's legal advisor)

Funding: P3

- Federal: \$1 billion
- Provincial: \$1.208 billion
- Municipal: \$2.449 billion

Substantial Completion: 2025

The Stage 2 Light Rail project will provide the foundation for the National Capital Region's growth and evolution through the twenty-first century. Stage 2, when complete, will extend the O-Train system farther south, east, and west, adding approximately 44 kilometres of new rail and 24 new stations. With the completion of Stage 2, 77 per cent of Ottawa residents will live within five kilometres of fast, efficient, clean, and reliable light rail service. The system will carry up to 24,000 customers per hour, per direction during peak periods to, from and through Ottawa's downtown core.

Stage 2 is a package of three extensions—south, east, and west:

- The O-Train South extension will see rail service continue from Greenboro to Limebank in Riverside South, while adding a link to the Ottawa Macdonald-Cartier International Airport.
- The O-Train East extension will see LRT continue from Blair to Place d'Orléans Station, and then all the way to Trim Road
- The O-Train West extension will see LRT continue from Tunney's Pasture to Moodie and Baseline Stations.

The first portion of the project, the Trillium Line, is planned for handover to the City of Ottawa in 2023. The second segment, Confederation Line East, is planned for handover at the end of 2024.



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Fraser River Tunnel Project \$4.15 billion (formerly George Massey Tunnel Replacement)



2022 Rank: 20

Location: Richmond and Delta, B.C.

Owner: Province of British Columbia (The Transportation Investment Corporation is leading the delivery of the project on behalf of the Ministry of Transportation and Infrastructure) Owner's Engineer: COWI (immersed tube tunnel); R.F. Binnie

& Associates Ltd. (highway and civil work)

Other Key Players: Golder-a WSP company (archeology & environmental services); Sartori Environmental Inc. (independent environmental monitor for the corridor improvement projects; TyPlan Consulting (marine navigation advisor); Lucent Quay Consulting Inc. (communication and engagement services—Highway 99 tunnel project/Steveston Interchange project); Northwest Hydraulic Consultants Ltd. (hydrotechnical and river hydraulics services); RAM Engineering Ltd. (marine construction advisor); Wood- a WSP company (consulting engineer)

Funding: Public

Substantial Completion: 2030

The Ministry of Transportation and Infrastructure announced on August 18, 2021, that a new, eight-lane immersed tube tunnel (ITT) will replace the existing George Massey Tunnel on Highway 99, providing people a toll-free crossing that aligns with regional interests and an active transportation connection across the Fraser River. The new tunnel is expected to open in 2030, with the cost estimated to be \$4.15 billion. In the interim, the province is also taking action to reduce traffic congestion and improve transit and cycling infrastructure along the Highway 99 corridor. Work on these improvements is underway, with one of



the three transit and cycling improvement projects scheduled for completion in fall 2022 and major construction works starting on the replacement of the Steveston Interchange. In April 2022, the Design-Build contract for the Steveston Interchange Project was awarded. Early construction followed, with major works starting in 2023. The project is expected to be complete in 2025. The Environmental Assessment process for the Fraser River Tunnel Project began in 2022.



Surrey Langley SkyTrain Project \$4.01 billion

2022 Rank: 21

Location: Surrey, B.C.

Owner: Province of British Columbia (The Transportation Investment Corporation is leading the delivery of the project on behalf of the Ministry of Transportation and Infrastructure)

Contractor: TBD

Engineer: Hatch (lead engineer); Westco, DIALOG Other Key Players: Deloitte; Golder-a WSP company (geotechnical studies); McElhanney Consulting Services;

Ausenco; Charter **Legal:** Norton Rose Fulbright

Funding: Public

Substantial Completion: 2028

The Surrey Langley SkyTrain Project is a 16-kilometre extension of the Expo Line primarily along Fraser Highway from King George Station in Surrey to 203 St. in Langley City Centre. With an elevated guideway, eight new stations, and three new transit exchanges, travel time between Langley City Centre and Surrey City Centre will be 22 minutes. Advance works are well underway, including the widening of Fraser Highway in the City of Surrey to accommodate the future guideway, the design and

relocation of utilities (including transmission, distribution, and telecommunications and the property acquisition process. In 2022, a public engagement process took place, highlighting station locations, transit-oriented development, and active transportation plans.

In July 2022, the Province of B.C. released an approved business case and budget. The multi-contract procurement process began in August 2022

with a Request for Qualifications (RFQ) for the guideway contract followed by an RFQ for stations in October 2022. The third contract for the design and installation of SkyTrain trackwork will be issued before the end of the year, and the Project's Request for Proposals (RFP) process will begin in 2023.

The \$4.01 billion overall cost of this project includes active transportation elements investments, such as cycling and pedestrian paths.



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Ontario Connects \$3.889 billion



2022 Rank: 22

Location: Province of Ont.

Owner: Ontario Ministry of Infrastructure

Procurement/Project Manager: Infrastructure Ontario Other Key Players: Ernst & Young LLP; Planview Utility Services Ltd.; Black & Veatch; Theory + Practice; KPMG LLP; Optimus SBR Inc.; Conboy Advisory Services Inc.; JTS Consulting Inc.

Service Providers: Bell Canada; Bragg Communications; Cogeco Connexion; Community Network Partner; Eh!tel Networks Inc.; North Frontenac Telephone Company; Rogers Communications Canada Inc.; Xplore Inc.

Funding: Public

Substantial Completion: 2025

The Government of Ontario has committed nearly \$4 billion to connect every region in Ontario to reliable, high-speed internet by the end of 2025. This is the largest single investment in highspeed internet, in any province, by any government in Canadian history. This investment will help ensure that every household and business, in every community, has access to the digital world. To connect the remaining unserved and underserved



communities across the province, Infrastructure Ontario led an innovative procurement process that started in summer 2021. The competitive process enabled Internet Service Providers (ISPs) to bid for provincial funding through a series of reverse auction events for defined geographic areas and based upon requirements for high-speed internet infrastructure deployment. In 2022, the Ontario government signed agreements with eight ISPs to bring access to municipalities across Ontario.





Finch West LRT \$3.433 billion



2022 Rank: 23

Location: Toronto, Ont.

Owner: Metrolinx

Procurement Agent: Infrastructure Ontario

DBFM Team: Mosaic Transit Partners–ACS Infrastructure Canada Inc.; Aecon Concessions; CRH Canada Group Inc. **Construction:** Aecon Infrastructure and Management Inc.; Dragados Canada Inc.; Dufferin Construction Company—a division of CRH Canada Group Inc.

Design: Arup Canada Inc.; Dillon Consulting Limited; DPM Energy Inc.; DTAH; Perkins + Will Canada Inc.; Sener SES Canada Inc.

Maintenance: ACS Infrastructure Canada Inc.; Aecon O&M-a division of Aecon Construction Group Inc.

Engineer: Jacobs (owner's engineer and project manager); WSP (engineer/sustainability consultant); Hatch (owner's engineer); LEA (engineer design); EXP

Other Key Players: AECOM (technical advisor); Aon (risk/ insurance advisor to authority); EY (advising gov't.); LeighFisher (lenders technical advisor); Parsons (overseeing technical advisor); INTECH Risk Management (insurance advisor); Morrison Hershfield (MEP design services); GHD (traffic mgmt.); Comtech (program/project consulting); Rider Levett Bucknall; Englobe; A. W. Hooker Associates Ltd. (cost consultant); Deloitte (management consultant); Entuitive; HKA; INFRATA (managing consultant)

Supplier: Bombardier (vehicles); Dufferin Concrete; DECAST (precast infrastructure)

Legal: Norton Rose Fulbright; McMillan LLP (for the lender) Funding: P3

Substantial Completion: 2023



This new LRT, located along Finch Avenue West in the city's northwest end, will be integrated with the city's existing transit system. The project includes 11 kilometres of new semidedicated rapid transit between Humber College and the new Finch West subway station on the Toronto-York Spadina subway extension; 18 surface stops and a below-grade interchange station to connect with the new Finch West subway station; and a maintenance and storage facility for the light rail vehicles. Construction is making progress throughout the Finch West LRT project, including road widening, continued utility relocations and upgrades, and excavating the underground interchange station at Finch West Subway Station. In summer 2021, the first light rail vehicle arrived at the Finch West Maintenance and Storage Facility.







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Hamilton LRT \$3.4 billion



2022 Rank: 24

Location: Hamilton, Ont.

Owner: Metrolinx

Procurement Agent: Infrastructure Ontario

Funding: Public • Federal: \$1.7 billion • Provincial: \$1.7 billion

Other Key Players: Wood-a WSP company (consulting engineer)

Substantial Completion: 2025

In September 2021, Hamilton City Council voted to reinitiate the project after it was previously cancelled by the province in 2019 due to rising costs. The LRT, as proposed, would bring 14 kilometres of rapid transit to Ontario's fifth-largest city. Once complete, the new LRT line will connect McMaster University in the west to Eastgate in the East, with 17 stops planned on the route. Demolition of Metrolinx-owned properties along the Hamilton LRT route began in the Spring of 2022, along with early construction works for utility relocations and procure-



ment-the Request for Qualifications for bidders-on the main construction contract is expected to start this year as well.

In the coming years, these properties will be required for station stops, infrastructure, and widening to accommodate the future LRT right of way. In the short term, demolition sites will be restored, secured with fencing, and monitored by security

Don River and Central Waterfront & Connected Projects \$3 billion

2022 Rank: 25

Location: Toronto, Ont. **Owner:** City of Toronto

Don River and Central Waterfront Wet Weather Flow System (DR&CW WWF System):

- Coxwell bypass (stage 1): Black & Veatch Canada (consultants); North Tunnel Constructors (contractor)
- Inner Harbour West Tunnel: Hatch/AECOM (consultant)
- Mid-Toronto-Interceptor (MTI) Real-Time Control: Tetra Tech

Integrated Pumping Station (IPS): Black & Veatch Canada (consultants); Strabag Canada (contractor-contract 2) Ashbridges Bay Landform Project: Toronto and Region Conservation Authority (TRCA) with Shoreplan Engineering (designer); TRCA (constructor of landform)

UV (Ultraviolet) Disinfection Facility: AECOM (consultants); Graham (contractor)

Outfall: Hatch, Jacobs and Baird (consultants); (SAJV) Southland Astaldi Joint Venture (contractor)

Funding: Public

Other Key Players: Wood-a WSP company (environmental engineer/geotechnical studies); Golder- a WSP company (geotechnical services)

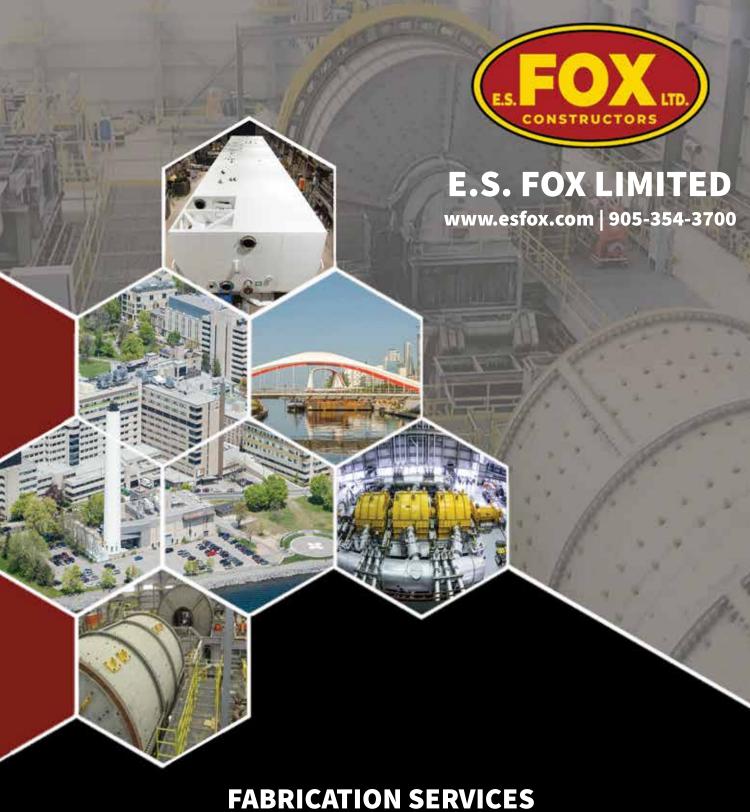
Substantial Completion: 2038

This project is a 25-year program that will improve water quality in Toronto's Lower Don River, Taylor-Massey Creek and the Inner Harbour. Toronto is embarking on the largest and most significant stormwater management program in the city's history. This program will greatly improve the water quality in the Lower Don River, Taylor-Massey Creek and along Toronto's Inner Harbour by keeping combined sewer overflows out of our waterways by upgrading technology and increasing the system's



capacity to capture, transport and treat them. The project is comprised of an integrated system of tunnels, storage shafts, connections, an integrated pumping station, a high-rate treatment facility, a real-time control system and wastewater treatment plant upgrades. Construction began in 2018 and the projected completion is 2038.

The program is made up of several individual projects that will work together, including the Don River and Central Waterfront Wet Weather Flow System, the Ashbridges Bay Treatment Plant (ABTP) Integrated Pumping Station, ABTP Ultra-Violet (UV) Disinfection Facility, ABTP Landform and high-rate treatment facility, and the ABTP Outfall. Major milestones in 2022 include the construction of the Coxwell Bypass Tunnel and the ABTP Outfall. In July 2022, the tunnel boring machine working on the Coxwell Bypass Tunnel broke through to create a 6.3 m diameter, 10.4 km long tunnel. As of September 2022, the project is 80 per cent complete and expected to finish in early 2024. Similarly, the tunnel boring machine for the outfall project has completed its full tunnel length, bringing the project toward 75 per cent completion. Other projects at the Ashbridges Bay Treatment Plant are also well underway, including the Ashbridges Bay Landform Project, a joint initiative between the City and the Toronto Region Conservation Authority (TRCA), the Integrated Pumping Station and the UV Disinfection Facility.



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Energy Services Acquisition Program's Energy Service Modernization \$3 billion



Location: Ottawa, Ont.

Owner: Government of Canada

DBFOM Team: Innovate Energy—Black & McDonald Capital Limited; Black & McDonald Limited; ENGIE Services Inc.; PCL Constructors Canada Inc.; PCL Investments Canada Inc.; BBB Architects Ottawa/Golder-a WSP company (design partners) **Other key players:** EY (oversight advisor); Aon (risk advisor) **Legal:** Norton Rose Fulbright (advisor to project owner) Funding: Public

Substantial Completion: 2027

Within the National Capital Region (NCR), Public Services and Procurement Canada (PSPC) is responsible for heating 80 buildings and cooling 67 buildings. As part of PSPC's activities, the Energy Services Acquisition Program was established in 2009 to explore new business models for the provision of energy services in the NCR. The modernization project is looking for an energy services solution for PSPC's five central heating and cooling plants (CHCP) and their associated distribution networks within the NCR.

In June 2019, Innovate Energy was awarded a contract that includes \$1.1 billion for the design and construction of the new District Energy System, a system which heats and cools buildings, to be completed by 2027, and an additional \$1.6 billion to cover the cost of operation and maintenance of the system through to 2055.

The design phase for the Modernized Gatineau Energy Centre began in spring 2022, and construction is expected to be completed by the end of 2026. The new centre is part of the District Energy System and when operational, will be carbon neutral and one of the cleanest, most sustainable energy centres of this scale in North America. By 2027, the entire District Energy System will be modernized and converted from an energy-intensive and high-polluting steam system to a state-of-the-art low-temperature hot-water system, reducing greenhouse gas emissions from heating and cooling operations by an estimated 92 per cent.



Broadway Subway Extension \$2.83 billion



2022 Rank: 27

Location: Vancouver, B.C.

Owner: Province of British Columbia (The Transportation Investment Corporation is leading the delivery of the project on behalf of the Ministry of Transportation and Infrastructure)

Owner: Province of British Columbia (The Transportation Investment Corporation is leading the delivery of the project on behalf of the Ministry of Transportation and Infrastructure)

DBF Team: The Broadway Subway Project Corporation – A joint venture of Acciona Infrastructure Canada Inc. and Ghella Canada Ltd. Other Key Players: IBI Professional Services (Canada) Inc. / DIALOG BC Architecture Engineering Interior Design Planning Inc. / Mott MacDonald Canada Ltd. / Parsons Inc / Norland / BD Hall Golder-a WSP company (geotechnical services); McElhanney (assessment and surveying services); Aon (risk advisor); Hanscomb (cost consultant); Morrison Hershfield (early works); Wood-a WSP company (consulting engineer/geotechnical studies)

Funding: Public

- Federal: \$896.9 million
- Provincial: \$1.82 billion
- Municipal: City of Vancouver: \$99.8 million (in-kind land contribution)

Substantial Completion: 2025

The Broadway Subway Project will see the addition of six underground stations and 5.7 kilometres of track to the Millennium Line. The extension will run from VCC-Clark Station to Arbutus Street; 700 metres will be elevated guideway and the remainder will be tunneled. On opening day, the line will have the capacity to move three times as many people through the corridor as the existing Tunnel boring has begun, and construction continues the elevated guideway portion of the line as well as the underground stations.



Ottawa Civic Hospital \$2.8 billion



2022 Rank: 28

Location: Ottawa, Ont.

Owner: The Ottawa Hospital

Development Advisory/Project Management: GBA Group **Strategic Finance Planning Services:** Deloitte

Architectural Services: HDR Architecture Associates, Inc.

Master Programmer: Agnew Peckham Health Care

Consultants Funding: Public

Substantial Completion: 2028

The Ottawa Hospital's new campus will serve the greater Ottawa/Eastern Ontario region, Western Quebec, and Nunavut.

The new hospital will feature highly specialized inpatient, outpatient, emergency, and trauma services, treating the most complex adult injuries and illnesses. This world-class centre for academic training and medical research will be networked with partners in Ontario, across Canada, and around the world.

Construction began in fall 2022 on the parking garage that will support the hospital. In late 2022, a RFP was issued by Infrastructure Ontario, seeking a design and development team for the main hospital building. At the conclusion of the RFP process, the successful bidder will work in collaboration with IO, The Ottawa Hospital and the Ministry of Health, under a Development Phase Agreement, to further define and refine project requirements, and design, pricing and risk parameters.

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Valley Line West LRT \$2.63 billion



Location: Edmonton, Alta. Owner: City of Edmonton

DB(F) Team: Marigold Infrastructure Partners—Colas, Parsons, Standard General, Francl Architecture, Fast & Epp, Stantec **Engineer:** connectEd Transit Partnership: AECOM (owner); Hatch; Mott MacDonald; DIALOG; ISL Engineering and Land Services; SMA Consulting; reVerb Communications; Hanscomb Other Key Players: EY (financial advisor); Aon (risk advisor); Golder-a WSP company (geotechnical studies); Morrison Hershfield, AW Hooker, Northstar Consultancy; INFRATA; Wood-a WSP company (materials tester)

Funding: P3

- Federal \$948.56 million
- Provincial \$1.04 billion
- Municipal \$637 million

Substantial Completion: 2026

The Valley Line West LRT project is the next phase of Edmonton's light rail expansion. This project represents a 14-kilometre extension of the existing system from downtown to Lewis Farms in west Edmonton. The low-foor, community-integrated urban style LRT will provide Edmonton with more transit options than ever before. Marigold Infrastructure Partners started construction in May 2021.

During the 2022 construction season, work included: a continuation of utility relocations, early work for the elevated guideway and two elevated stations at West Edmonton Mall and the Misericordia Community Hospital, site preparations where street-level stops will be located, and preparatory work for the bridge at Anthony Henday Drive, the storage facility at Lewis Farms and the expansion of the Gerry Wright operations and maintenance

Additionally, in late 2021, Hyundai Rotem Company was selected as the preferred proponent to supply 46 light-rail vehicles (LRVs) which will integrate with Valley Line Southeast to ensure a seamless ride between Mill Woods and Lewis Farms.



Projet Hôpital Vaudreuil-Soulanges \$2.6 billion



2022 Rank: 55

Location: Vaudreuil-Dorion, Que.

Owner: CISSS (Centre intégré de santé et des services sociaux)

de la Montérégie-Ouest

Engineer: Stantec; CIMA+; BPA (constultant)

Architect: Provencher et Roy

Funding: Public

Substantial Completion: 2026

In 2022, the CISSS de la Montérégie-Ouest, in partnership with the Société québécoise des infrastructures and the Ministère de la Santé et des Services sociaux, will break ground on the future Hôpital de Vaudreuil-Soulanges. This ambitious infrastructure project will provide the region with a 404-bed hospital, featuring an 11-room operating block and a 41-stretcher emergency department-one of the biggest in the Montérégie region. Estimated at \$2.6 billion, this project will position the Hôpital de Vaudreuil-Soulanges as a leading-edge facility and a model for the next generation of Québec hospitals. The hospital will be equipped with state-of-the-art technologies and innovations aimed at optimizing the experience for both patients and staff. It will also be built according to environmental and sustainable development best practices. The Hôpital de Vaudreuil-Soulanges is scheduled to open in 2026, prior to which the CISSS de la Montérégie-Ouest estimates that more than 3,200 people (staff, managers, and doctors) will need to be hired.



New Hospital for Sick Children \$2.4 billion



2022 Rank: 31

Location: Toronto, Ont.

Owner: Hospital for Sick Children

Engineer: WSP (planning)

Patient Support Care Project Team

Construction Manager: PCL Constructors Canada Inc.; Architect: B+H Architects (only for the Patient Support Centre); Structural Consultant: Entuitive; Electrical Consultant: Mulvey & Banani; Mechanical Consultant: The Mitchell Partnership; **Demolition: Priestly Demolition**

Peter Gilgan Family Patient Care Tower-Stage 2 Functional

Design Team: Stantec/KPMG joint venture; Functional Programmer: RPG; Engineer: WSP (master planning, Stage 1&2) Other Key Players: Hanscomb (cost consultant); EY (management consultant)

Supplier: Stantec

Legal: Borden Ladner Gervais, McMillan LLP (for the owner)

Funding: Public

Substantial Completion: 2035

Dubbed 'Project Horizon' by SickKids, the three-phase project to rebuild and rehabilitate The Hospital for Sick Children in Toronto is well underway. There are three phases to the project, which are expected to take a total of 15 years to complete: A new 22-storey Patient Support Centre; The Peter Gilgan Family Patient Care Tower; and Renovations to the existing campus. In June 2020, work began on laying the foundation for the Patient Support Centre, which is scheduled for completion in the summer of 2023. The Patient Care Tower is scheduled for completion in 2029, followed by the completion of the Peter Gilgan Family Patient Care Tower in 2035.

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F.G. Gardiner Expressway Strategic Rehabilitation Plan \$2.3 billion

2022 Rank: 32

Location: Toronto, Ont. **Owner:** City of Toronto

Contractor: Aecon (Section 1: from Cherry St. to Jarvis St.)

Consulting Engineers: WSP; Morrison Hershfield; Parsons Environmental Services: Dillon Consulting Limited (environmental assessment); Perkins+Will; Hargreaves Associates

Other Key Players: EY, Hanscomb, and HDR (advisory support); Aon (risk advisor); WSP (design work); EllisDon;

Englobe; Entuitive; HKA Supplier: Canam Group

Legal: Blake, Cassels & Graydon (City of Toronto); Osler

Funding: Public

Substantial Completion: 2030

The City of Toronto is taking a proactive approach to managing the rehabilitation of the Gardiner Expressway to keep the roadway in a state of good repair. The Plan addresses the rehabilitation of the expressway, extending from Highway 427 to the eastern limit at the Don Valley Parkway (DVP), including the 11-km at-grade section from Highway 427 to Dufferin Street with its 32 bridges and structures, and the 7-km elevated section from Dufferin Street to the DVP with 335 spans. The eastern section is also part of several urban renewal projects underway nearby and incorporates the change of scope for the rehabilitation portion east of Jarvis Street based on an environmental

In 2022, the City began procurement for the second section in the Rehabilitation Plan and will rebuild and repair the elevated portion of the Expressway between Dufferin Street and

This work is concurrent with several major initiatives in the area such as a new Exhibition Station being built by Metrolinx and CNE BMO Field preparations for the 2026 FIFA World Cup. Construction is anticipated to begin in 2023, once the procurement process is completed.



Quebec City University Hospital Centre – Laval University \$2.239 billion



2022 Rank: 39

Location: Quebec City, Que.

Owner: CHU de Québec-Université Laval

Project Manager: Société québécoise des infrastructures (SQI)

Construction Manager: (Phase 1) Pomerleau

Construction Manager: (Phase 2) Groupe Axor Inc.

Commissioning Officer: Ambioner; Pageau Morel et associés inc. Architecture: AES Group-Groupe A/Annexe U; DMG architecture; Lemay; Jodoin Lamarre Pratte architectes; NFOE Inc.; **GLCRM Architectes**

Civil engineering and structure: CIMA+; Stantec

Mechanical and Electrical Engineering: SNC-Lavalin; Bouthillette Parizeau; Tetra Tech

Other Key Players: Englobe (geotechnical/environmental investigation, quality control); GHD (vibration monitoring); Golder-a WSP company (geotechnical studies); Deloitte

Funding: Public/Private **Substantial Completion: 2029**

The new hospital complex (NCH) aims to consolidate the clinical services currently offered at the Hôtel-Dieu de Québec and the Enfant-Jésus Hospital. The project consists of constructing new buildings on the site of the Enfant-Jésus hospital and redeveloping certain existing spaces.

The radio-oncology services were moved in May 2022 from the Hôtel-Dieu de Québec site to the site of the Enfant-Jésus hospital where an integrated cancer center has been built. The other services of the Hôtel-Dieu will be integrated into the new critical care pavilion of the NCH as well as into the redesigned spaces of the Hôpital de l'Enfant-Jésus.

The NCH will have 700 hospital beds, including 105 critical care beds, 30 operating rooms and 60 emergency stretchers.



St. Paul's Hospital \$2.174 billion



2022 Rank: 34

Location: Vancouver, B.C.

Owner: Providence Health Care/Vancouver Coastal Health

DB (F): PCL Construction

Engineer: Tetra Tech (geotechnical design)

Architect: HDR

Other Key Players: IBI Group (early design works); KPMG (clinical planning services); Entuitive; EY (mgmt. consultant); McElhanney (site surveyor); WSP (design services)

Funding: Public/Private

• Provincial: \$1.327 billion

• Private: Providence Health Care \$850 million (from sale of existing hospital site); St. Paul's Foundation \$225 million

Substantial Completion: 2027

In February 2019, the Government of British Columbia approved the business plan for a new St. Paul's Hospital in downtown Vancouver.

The new hospital will continue to serve as an acute-care hospital and integrated health campus. The new facility will be expanded to a capacity of 548 beds and will be the home of several leading provincial programs and referral centres, including for heart and lung care, renal, eating disorders and specialty surgeries and transplants.

The project will be done in two phases, consisting of the new core hospital and a clinical support and research centre.



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Trillium Health Partners Redevelopment – Mississauga Hospital \$2+ billion



Location: Mississauga, Ont. Owner: Trillium Health Partners

Procurement Manager: Infrastructure Ontario Consultant: Stantec (planning, design, and conformance

services) Funding: Public

Substantial Completion: TBD

Trillium Health Partners is the largest community-based hospital network in Canada. This historic, multi-billion-dollar project is a key part of Ontario's plan to build a stronger, more resilient health care system and Trillium Health Partners' plan to create a new kind of health care that serves the growing and diverse communities in Mississauga and Etobicoke. Over the next 20 years, the demand for health care services offered by Trillium Health Partners is expected to increase by nearly seven times more than the average hospital in Ontario. In anticipation of this growth, the new Peter Gilgan Mississauga Hospital will fully replace the existing Mississauga Hospital. In September 2022, following a fair and open two-phase RFP



process, EllisDon + PCL Health Care Partners submitted their proposal. The project is being procured using a new progressive public-private partnership (P3) approach, which involves both a Development Phase Agreement and a design-build-finance-maintain P3 Project Agreement.



Ville-Marie and Viger Tunnels \$2 billion

2022 Rank: 35

Location: Montréal, Que.

Owner: Ministère des Transports et de la Mobilité durable

Engineer: Consortium AECOM/Tetra Tech/Parsons; Wood-a WSP company (consulting)

Other Key Players: WSP (construction services); TVM 20-30 Consortium—CIMA+/Stantec/FNX-Innov (construction supervision services)

Monitoring: TVM 20-30 Consortium (CIMA+/Stantec Expertsconseils)

Funding: Public

Substantial Completion: 2030

The Ville-Marie and Viger tunnels are integral parts of the Montreal transportation network. The two tunnels are located in the axis of Route 136, formerly known as Autoroute 720 along a stretch commonly referred to as the Ville-Marie highway. The Ville-Marie tunnel was inaugurated in 1974, followed by the Viger in 1986. The tunnels crisscross a densely built environment area, both above and below ground, since they coexist with the Montréal underground where there are pedestrian tunnels, metro tunnels, commercial spaces and parking lots.

The project is planned to be realized in six construction lots. All four sub-lots of lot 1 are now under construction (anticipated work time in brackets): 1A-The complete repair of the tunnels at the exit of de la Montagne, including the dismantling of the last paralumes (two years); 1B-the beginning of electrical migration work towards 25 kilovolts (one-and-a-half years); 1C-the reconstruction of the decks of the Saint-Urbain and Saint-Laurent overpasses (four-and-a-half years); and 1D-the replacement of 37 exhaust fans (three-and-a-half years).

The last paralumes have been demolished and most of the contract work for lot 1A has been completed. Work for lots 1B and 1C started this year.



81-141 Bay Street \$2 billion



2022 Rank: 36

52 ReNew Canada

Location: Toronto, Ont.

Owner: Metrolinx and Ivanhoé Cambridge **Project Manager:** Hines (project development) **Contractor:** EllisDon (general contractor)

Engineer: TMP (mechanical); Wood-a WSP company (consulting) Architect: Wilkinson Eyre Architects (design); Adamson Asso-

ciates Architects (executive architect); DBOX

Other Key Players: Arup (pedestrian modelling); INTECH Risk Management (advisor to developers); KPMG (advisor to Metrolinx for initial planning stage); Morrison Hershfield (building envelope consultant); WSP (sustainability consultants, geotechnical/environmental work); Cushman &

Legal: Torys (representing project owner)

Funding: Public/Private (being delivered as part of GO Expansion-Early Works program)

Substantial Completion: 2023

The Bay Street project (CIBC Square) involves the construction of two new commercial buildings, joined by a one-acre elevated park over the rail corridor near Union Station. A key component of the construction is the new Union Station Bus Terminal. Construction got underway on the terminal in 2017. The terminal will provide connections for users of the rail and bus networks. In March 2020, a modified site plan for the second building, 141 Bay Street, which will include accommodation for the potential future LRT along the Bay Street corridor. The new Union Station Bus Terminal was delivered by Metrolinx as part of the GO Expansion Early Works program.

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QEII New Generation project \$2 billion



2022 Rank: 37

Location: Halifax, N.S. and surrounding communities Owner: Government of Nova Scotia

Project Manager: Nova Scotia Lands

DBFM Contract (Bayers Lake Community Outpatient Centre) -EllisDon Infrastructure HealthCare

- P3 Electrical Design Team: Mulvey & Banani International Inc./Dillon Consulting Limited, led by Plan-Group/Cahill.
- P3 Mechanical Design Team: HHA/Dillon Consulting Limited, led by Plan-Group/Cahill.

Contractor: PCL Constructors Canada Ltd. (Hants Community Hospital renovation)

Other Key Players: Contracting Specialties (2005) Inc.; Coastal Woodworkers Ltd.; Dantra Specialty Products; Duron Atlantic Limited; Twin City Painting (1979) Limited; Northfield Glass Group Ltd.; Apex Industries; Atlantica Mechanical; Bond and Coolen Contracting Ltd.; Life Safety Systems; RKO Steel Ltd.; Southeast Drywall Ltd.; Inflector Environmental Services; Darim Masonry Limited; Flynn Canada Limited; McCarthy's Roofing Limited; Royal Door Limited; Kasian (planing and design compliance team); Deloitte (financial advisor); Hanscomb (cost consultant)

Legal: Borden Ladner Gervais; Osler (for the proponent) **Funding:** Public/P3

Substantial Completion: TBD

The redevelopment of the QEII Health Science Centre is a multi-phase project involving several health care sites throughout Halifax and the surrounding area. The project will transform health care delivery in Nova Scotia, providing modern services for patients throughout the province.

The primarily project elements include: the renovation of Hants Community Hospital in Windsor; renovation of Dartmouth General Hospital; a new Community Outpatient Centre in Bayers Lake; expansion of the Halifax Infirmary site; a new hospice residence in Halifax; and movement of the QEII Cancer Centre to the new Infirmary site.

Completion of these projects will result in the closure of Centennial, Dickson, and Victoria buildings on the OEII Victoria site in Halifax.



Roberts Bank Terminal 2 Expansion \$2 billion



2022 Rank: 38

Location: Delta, B.C.

Owner: Vancouver Fraser Port Authority

Project/Construction Manager: Collings Johnston Inc.

(program management), Hatch (project controls)

Engineer: Moffatt & Nichol (owner's engineer), Stantec

(engineering and design)

Environmental Services: Ecofish, Ecowest, Ausenco, Golder-a WSP company, AECOM, Ventus, BlueDot (environmental assessment and permitting)

Other Key Players: KPMG (procurement advisory), Hamburg Port Consultants (terminal operations); WSP

Legal: Blake, Cassels & Graydon LLP, Fasken Martineau DuMoulin LLP (legal advisor to owner)

Financing Detail: Roberts Bank Terminal 2 will be funded by the financially self-sufficient port authority and private investment.

Substantial Completion: 2030+

To meet Canada's coming capacity needs for containerized trade, the Vancouver Fraser Port Authority is leading the Roberts Bank Terminal 2 Project, a proposed marine container terminal on Canada's west coast. The project is in the final stages of a federal environmental assessment process. If approved by the federal government, the terminal will be a critical link for Canada's supply chains, increasing container terminal capacity by more than 30 per cent on Canada's west coast, supporting competition in the gateway, and strengthening reliable access to goods Canadians use every day.

There are three main components of the proposed project: • A new three berth marine container terminal with throughput capacity of up to 2.4 million twenty-foot equivalent (TEU) con-



tainers annually

- A widened causeway to accommodate additional road and rail infrastructure
- An expanded tug basin to accommodate additional tugs

After considering the feedback received, and assessing procurement objectives, the port authority has decided to move forward with a two-phased procurement approach. First, the port authority will select a contractor to build the new landmass and marine structures needed for the project. Then, prior to the anticipated start of terminal operations, the terminal operator will be selected to build, equip, and operate the new terminal through a terminal concession agreement.

If the government approves the project, the port authority anticipates that the request for qualifications to select a contractor to build the landmass could be issued within six to 12 months thereafter.



Wataynikaneyap Transmission Project \$1.9 billion



2022 Rank: 40

Location: Northern Ont.

Owner: Wataynikaneyap Power

Contractor: EPC Contrct: Valard Construction

Engineer: Hatch (owner's engineer); Wood-a WSP company (consulting)

Environmental Services: Golder-a WSP company (Phase 1 EA)

Other Key Players: PowerTel, Deutsche Bank (MOU for design, construction, and financial services); PwC (financial feasibility study and socioeconomic impact analysis); Arcadis Canada Inc. (Phase 2 routing study); EY (consultant); INTECH Risk Management; Englobe Legal: Torys (legal advisor); McMillan LLP (for the federal govern-

Funding: Public/Private

• Federal \$560 million

• Provincial \$1.34 billion (loan) **Substantial Completion: 2023**

Wataynikaneyap Power is majority-owned by a partnership of 24 First Nations, in partnership with Fortis Inc. and other private investors, and regulated by the Ontario Energy Board. Wataynikaneyap Power will develop and operate the transmission facilities to connect 17 remote communities to the power grid and transition them away from diesel generation.

The plan calls for an 1,800-km transmission line broken into two phases: a 300-km line to Pickle Lake, and transmission lines to connect the communities north of Pickle Lake and Red Lake. In August 2022, a 230 kV line, 300 kms from Dinorwic to Pickle Lake, was completed and energized and in November, the Kingfisher Lake First Nation was connected to the power grid.



North End Sewage Treatment Upgrades \$1.854 billion



2022 Rank: 41

Location: Winnipeg, Man.

Owner: City of Winnipeg

Engineer: KGS Group (owner's advocate/consultant)—NEWPCC Power Supply Upgrade; AECOM (owner's advocate/consultant)-NEWPCC Upgrade: Headworks, Biosolids & Nutrient Removal Facilities

Design Builder—NEWPCC Power Supply Upgrad: Black & Macdonald

Design Builder—NEWPCC Upgrade: Headwork Facilities: Red River Solutions (Aecon/Oscar Renda JV)

Other Key Players: Veolia; P1 Consulting Ltd.; KGS Group Ltd. (owner's advocate/consultant); Wood-a WSP company (design engineer)

Legal: Blake, Cassels & Graydon Funding: Public

Emil Anderson Construction

- Federal \$116.111 million
- Provincial \$96.750 million
- Municipal \$1.641 billion

Substantial Completion: 2025

In February 2019, Winnipeg City Council approved a request to break the overall project into three separate capital projects: North End Sewage Treatment Plant Upgrades-Power Supply & Headworks Facilities; North End Sewage Treatment Plant Upgrades-Biosolids Facilities; and North End Sewage Treatment Plant Upgrades-Nutrient Removal Facilities.

The scope of work for the first capital project includes the design and construction of a new headworks facility that will include a raw sewage pump station, a micro-tunnel extension of existing interceptor sewers, a grit removal system, a main control room, fine screens and compactors, and a plant emergency generator facility.



Highway 1 Upgrades – Kamloops to Alberta \$1.705 billion



2022 Rank: 42

Location: Kamloops, B.C. to the Alberta border

Owner: B.C. Ministry of Transportation and Infrastructure DB Team: Team (Kicking Horse Canyon Phase 4): Kicking Horse Canyon Constructors: Aecon Group Inc, Parsons,

Contractors: Emil Anderson Construction Inc. (Illecillewaet); Springline (Salmon Arm West); Pennecon (Quartz Creek Bridge); Dawson Civil (Chase West); CIF (Chase East)

Engineer: Wood-a WSP company (consulting) Other Key Players: Golder-a WSP company (geotech., environmental services); Englobe (pavement engineering services, QA, QV); WSP (construction supervision services); McElhanney (design and planning services); Hanscomb (cost consultant); EY (mgmt. consultant)

Funding: P3

Federal: \$505 million **Provincial:** \$1.2 billion **Substantial Completion: 2026**

The Government of B.C. has embarked on a 10-year project to expand the Trans-Canada Highway (Highway 1) between the city of Kamloops and the Alberta border. Highway 1 includes 339 kms under the jurisdiction of the B.C. Ministry of Transportation and Infrastructure, as well as 101 kms under the jurisdiction of Parks Canada. There are seven sections of the work that are scheduled for completion: Chase four-laning at a cost of \$220M; Ford Road to Tappen Valley overhead, at a cost of \$243M; Salmon Arm west, at a cost of \$155M; Bruhn Bridge, at a cost of \$224.5M; Illecillewaet, at a cost of \$85.2M; Quartz Bridge and four-laning, at a cost of \$123.7M; and Kicking Horse Canyon Phase 4, at a cost of \$601 million.





Réno-Systèmes 5/ Réno-Infra 3/Metro Accessibility Program \$1.66 billion

2022 Rank: 78

Location: Montreal, Que.

Owner: Société de transport de Montréal (STM) **Engineer:** STM, Consortium: SNC-Lavalin-Stantec Other Key Players: Bairn Architecture et Design; Englobe (quality management services); WSP

(independent certifier)

Funding: Public

Substantial Completion: 2020-2026

The STM has implemented three programs for asset maintenance and development of the metro network.

The Réno-Systèmes program's objective is to replace and refurbish the metro's fixed equipment that has reached or exceeded its lifecycle. With a budget of \$800 million, the program is in its fifth phase. During 2022, five out of eight rectifier planned stations were completed, the contract for replacing statomagnetic logic elements and mechanisms was awarded and two calls of tenders have been launched.

The Réno-Infrastructures program was set up to intervene preventively on all infrastructures. The program is in its third phase with a budget of \$500 million and will allow the repair of several metro network infrastructures to maintain the integrity of the facilities.

During 2022, construction work has progressed to allow the complete repair of the waterproofing membrane of the roof of the McGill station, the rehabilitation of three station entrances as well as the construction of a new entrance between two highrise buildings required for the installation of the two elevators at this station.

The Metro Accessibility program is directly devoted to the development of the level of service and improving the customer experience in terms of universal accessibility by integrating elevators into stations that already exist and are in operation, as well as the integration of new pieces of art in those stations. The first phase of this program targets 12 stations.



Renovations to Beauharnois Generating Station \$1.6 billion

2022 Rank: 44

Location: Beauharnois, Que. Owner: Hydro-Québec

Project/Construction Manager: Hydro-Québec Équipement

Contractor: HMI Construction Inc.

Engineer: Stantec, SNC-Lavalin, CIMA+

Other Key Players: GHD (geotechnical and material testing); Englobe (quality assurance inspection services)); WSP (design

of boom storage area) **Supplier:** Voith Hydro Legal: Borden Ladner Gervais

Funding: Public

Substantial Completion: 2022

Since 1994, this hydroelectric station has been undergoing gradual renovations and replacement of its generation units. The plant was powered by the Beauharnois Canal, which had been newly dredged and expanded to one kilometre in width for that purpose. At the time of its construction, it was considered to be the largest hydroelectric station in Canada. Today, at 1,900 MW, it is still one of the largest run-of-river plants in the world.

The current project also includes restoration of the station's historic art deco architecture, which led it to be designated as a National Historic Site. Renovations continue, and work is expected to be completed in 2022, with the last of six generating units undergoing performance optimization.



Macdonald Block Reconstruction Project \$1.536 billion



2022 Rank: 45

Location: Toronto, Ont.

Owner: Ontario Ministry of Public and Business Delivery Services

Project/Construction Manager: Infrastructure Ontario

DBFM Team: Fengate PCL Progress Partners (FP3) Developers: Fengate Asset Management and PCL Investments

Canada Inc.

Design-Builder: PCL Constructors Canada Inc.

Design Architect: WZMH Architects

Facilities Management: Johnson Controls Canada Financial Advisor: National Bank Financial.

Engineer: TMP (mechanical)

Other Key Players: Aon (risk advisor); Hanscomb; Morrison Hershfield; Entuitive; EY (management consultant); Comtech (project management consultant); WSP (design of boom storage area) Funding: P3 **Substantial Completion: 2024**

The Macdonald Block Complex is the hub for administrative services for the Government of Ontario. The complex consists of five buildings, including four office towers, with a total of approximately 1.7 million square feet. Each building in the complex will be taken back to its original building core, remediated, and rebuilt using modern technologies, systems and materials while preserving the integrity of its many heritage features. The newly reconstructed complex will meet current building, health, safety, and accessibility standards and will accommodate significantly more employees through more efficient use of this government-owned office space.





Bloor-Yonge Station Capacity Improvements \$1.5 billion



2022 Rank: 46

Location: Toronto, Ont.

Owner: Toronto Transit Commission

Owner's Engineeer: AECOM

Other Key Players: AECOM (preliminary design and early works); Golder-a WSP company (geotechnical studies); WSP

Funding: Public

Substantial Completion: 2029

Bloor-Yonge Station will be undergoing a design retrofit and significant expansion to meet both current and future ridership demand. The Bloor-Yonge Station project includes the construction of a new Line 2 passenger platform and the expansion of both Line 1 passenger platforms, enhancements to the concourse level, entrances, exits and improved accessibility



Cascade Power Project \$1.5 billion 2

2022 Rank: 47

Location: Yellowhead County, Alta. **Owner:** Kineticor Resource Corp. **Construction Manager: PCL** Contractor: Graham (Phase 1)

Engineer: PCL/ Black & Veatch JV (engineering design);

McElhanney (consulting)

Supplier: Siemens (2x SCC6-8000H Power Trains) Financier: Macquerie Capital, OPTrust (joint development sponsoirs); OPTrust, Axium Infrastructure, DIF Capital

Partners (project sponsors) **Legal:** Osler (advisor for Kineticor) **Funding:** Private

Substantial Completion: 2023

The Cascade Power Project is a 900 Megawatt (MW) combined cycle natural gas-fired generating facility, being constructed approximately 12 kilometres southwest of Edson in Alberta's Yellowhead County.

Upon completion, the new plant will have the caapcity to supply up to eight per cent of the province's overall current energy needs.

Financial close on the project was reached in August 2020. Construction is underway, and is scheduled for completion sometime in 2023.



Royal Columbian Hospital Redevelopment Projecct \$1.49 billion



2022 Rank: 48

Location: New Westminster, B.C. **Owner:** Fraser Health Authority

Design-Build Team: EllisDon Design Build Inc. Architects: Parkin Architects Ltd.; HDR

Other Key Players: WSP (owner's technical advisor)

Funding: Public

Substantial Completion: 2026

The Royal Columbian Hospital redevelopment is a three-phase,

multi-year project that will increase the hospital's capacity by approximately 50 per cent, introduce advanced medical technologies and improve the health care environment for staff and patients. Phase 1's Mental Health and Substance Use Wellness Centre opened in August 2020. Phase 2, now under construction, will create a new acute care tower and expand the hospital's bed capacity. Phase 2 is expected to be complete in 2025. Phase 3 will upgrade and expand areas in existing buildings to support the beds and services in the new acute care tower. Phase 3 construction is expected to begin in 2024 and be complete by 2026.



SmartTrack Stations Program \$1.463 billion



2022 Rank: 49

Location: Toronto, Ont.

Owner: City of Toronto/Province of Ontario

Project Manager: Metrolinx

Funding: Public

Substantial Completion: 2026

The SmartTrack Stations Program will improve transportation choice within Toronto by leveraging existing transit infrastructure to serve more people. Combined with Metrolinx's GO Expansion Program, the SmartTrack Stations Program will transform

heavy rail infrastructure in Toronto from a regional commuter service into an urban rapid transit network. The SmartTrack Stations Program, funded by the City of Toronto, will see five stations constructed at Finch-Kennedy, East Harbour, King-Liberty, Bloor-Lansdowne, and St. Clair-Old Weston. Through the GO Expansion Program, the stations will be supported with all-day, twoway service, increased frequency, and quieter and faster trains. The SmartTrack Stations program will expand transit access for Toronto residents travelling within and beyond the city. The procurement process for the St. Clair-Old Weston; Finch-Kennedy; King-Liberty; and Bloor-Landsdowne is underway.





Louis-Hippolyte-Lafontaine Tunnel Project \$1.426 billion

2022 Rank: 50

Location: Montréal, Que.

Owner: Ministère des Transports et de la Mobilité durable (MTMD)

P3/Project Team: Vinci (subsidiaries Eurovia and Dodin Campenon Bernard); Pomerleau (50-50 JV)

Engineer: Parsons, Tetra Tech (owner's engineer); WSP; Hatch (lead); Lombardi (tunnel safety); EXP (design, consulting) Other Key Players: Aon (risk advisor); CIMA+, Egis (independent certifier); Jacobs (mgmt. consultant); Deloitte (mgmt. consultant); Englobe

Financier: Desjardins Capital Markets **Legal:** Borden Ladner Gervais

Funding: P3

• Federal: \$427.7 million • Provincial: \$994 million • Municipal: \$4.1 million

Substantial Completion: 2026

The original Louis-Hippolyte La Fontaine Tunnel was constructed in 1967 and needed significant rehabilitation to make it viable for residents in Montreal. In August 2020, the contract was awarded for the rehabilitation project. Construction work began in 2021.

The main work in the tunnel consists of carrying out major structural repairs, modernizing operating equipment, redeveloping service corridors, and adding fire protection.

In 2022, the work carried out aims to rebuild the roadway of Highway 25 southbound between Sherbrooke Street and the tunnel, as well as structural repairs in the Souligny interchange. In the tunnel, repair work on the apron (element that is below the carriageway and which is the base of the tunnel) in the southbound tube is in progress, as are interventions to modernize the operating systems of the tunnel.



Calgary Cancer Centre \$1.4 billion



2022 Rank: 51

Location: Calgary, Alberta

Project Owner: Alberta Health Services

Project Delivery Provider: Alberta Infrastructure

Design-Build Team: PCL; Stantec; DIALOG

Architect: HKS and Marshall Tittemore Architects (subconsult-

ants); DIALOG; Stantec

Other Key Players: Arup (technical advisor and prime consultant); EY (advising gov't.); KPMG (commercial advisor); Morrison Hershfield (commissioning study); Colliers Project Leaders; Aon (risk advisor)

Supplier: Canam Group

Legal: Norton Rose Fulbright (for the authority)

Funding: Public

Substantial Completion: 2023

This new comprehensive cancer centre is currently under construction at the Foothills Medical Centre site in Calgary. The 95,000-plus-square-metre complex will include 160 inpatient

beds, outpatient facilities with over 100 exam rooms. systemic treatment and radiation treatment technologies, clinical trial units and research laboratories, a knowledge exchange centre



and 1,650 stalls of underground parking. The centre will provide much-needed access to cutting-edge treatment and care for residents of Calgary and southern Alberta. Despite the impacts of the COVID-19 pandemic, the project reached its topping off point in late April 2020 and remains on schedule for completion in 2023. The project is expected to achieve Substantial Completion end of fall 2022, followed by a two-year warranty period. Commissioning process has begun, and user training will begin in early 2022 in preparation for turnover of the facility to Alberta Health Services Final submission for LEED accreditation is expected to be submitted to the Canadian Green Building Council by the end of 2022 and for accreditation the following year.



Burnaby Hospital Redevelopment \$1.4 billion



Location: Burnaby, B.C.

Owner: Fraser Health Authority **Project Manager:** Partnerships BC

DBF Team: EllisDon Infrastructure (Phase 1) Other Key Players: WSP (owner's technical advisor)

Funding: Public

2022 Rank: 52

Substantial Completion: 2028

The redevelopment will add two new patient-care towers with new units and operating rooms, resulting in 399 beds on the campus, a bigger emergency department and a new cancer

treatment centre. The last major upgrade to the Burnaby Hospital was more than 40 years ago.

The redevelopment begins with a new six-storey Keith and Betty Beedie Pavilion with 83 beds in primarily single-patient rooms with a private bathroom. The pavilion will include a maternity unit, a neonatal intensive care unit and a medical inpatient unit with negative pressure rooms and outbreak zones to isolate infectious diseases.

The six-storey pavilion, the new surgery centre and renovations to existing buildings are scheduled to be complete in 2026. The second patient-care tower is expected to have 160 new beds and a state-of-the-art cancer treatment centre.

Pattullo Bridge Replacement Project \$1.377 billion

2022 Rank: 53

Location: New Westminster and Surrey, B.C.

Owner: Province of British Columbia (The Transportation Investment Corporation is leading the delivery of the project on behalf of the Ministry of Transportation and Infrastructure)

Owner's Team: TI Corp., Charter PDI, WSP, R.F. Binnie, Northwest Hydraulic Consultants, Tetra Tech, TYLin, Archer CRM Joint Venture Design Team: Leonhardt, Andrä and Partner (LAP), EXP, Thurber Engineering, GNEC, VIA Architecture, Hatch

DBF Team: Fraser Crossing Partners

- Proponent: Acciona Infrastructure Canada Inc. and Aecon Construction Group Inc.
- Design-build contractor: Acciona Infrastructure Canada Inc. and Aecon Constructors
- · Long-span bridge design contractor: Leonhardt, Andrä und Partner Beratende Ingenieure VBI AG, Hatch, EXP Services Inc., Acciona Infrastructure Canada Inc.

Engineer: Parsons (Owner's Engineer); Hatch; Tetra Tech (environmental); WSP (owner's engineer)

Other Key Players: Golder-a WSP company; Morrison Hershfield (engineering services); Wood-a WSP company (materials tester): Deloitte (commercial advisor): Hemmera: Hanscomb (cost consultant); McElhanney, G. Ho Engineering Consultants (road safety audits)

Legal: Borden Ladner Gervais; McMillan LLP (for the lender)

Funding: Public

Substantial Completion: 2024 (new bridge); 2026 (demolition of old bridge)

In February of 2018, the Government of British Columbia announced its plans to replace the Pattullo Bridge, a key crossing between Surrey and New Westminster. Built in 1937, the bridge is one of the oldest in the Metro Vancouver area and was built for a 50-year lifespan in May 2019, the project was granted an environmental assessment certificate. The Acciona/Aecon joint venture team was selected as the preferred proponent in December 2019, with the contract awarded in February 2020. The new four lane crossing is being built to modern safety standards and features wider lanes to better accommodate passenger and commercial vehicles, a centre median barrier, dedicated multi-use pathways for walking and cycling that are separated from traffic on both sides of the bridge and is designed to accommodate potential future expansion to six lanes. The new bridge will be located just upstream and northeast of the existing bridge and will include new on and off ramps to connect the new bridge with the existing road network. The existing bridge will remain in use until the new bridge is open to traffic, then it will be safely demolished. Major construction is underway. In-river, construction is underway on the bridge tower, and work is also underway to build the second in-river foundationIn New Westminster and Surrey, bridge foundation construction, utility relocations and roadworks are underway.



Port Hope Area Initiative \$1.28 billion



2022 Rank: 54

Location: Port Hope and Clarington, Ont.

Owner: Atomic Energy Canada Ltd., Natural Resources Canada Project/Construction Manager: Canadian Nuclear Laboratories Contractor: Wood-CB&I Joint Venture; ECC/Quantum Murray Limited Partnership; Wood-a WSP company; Maple Reinders; Kenaidan Contracting Ltd.; Northwind Portage; Milestone Environmental; WSP; Graham

Engineer: GHD/MMM Joint Venture; AECOM; WSP; Wood **Environmental Services:** : Golder-a WSP company (contamination investigation/remediation; Phase I ESA; geotechnical); Phase I ESA; geotechnical); Arcadis Canada; Dillon Consulting

Other Key Players: Hanscomb (owner's preliminary design stage cost consultant and special advisor); Arcadis (excavation and waste removal); Tetra Tech; SNC-Lavalin; Colliers Project Leaders; CIMA+; Aon (risk advisor)

Financiers/Banks: Natural Resources Canada **Legal:** Osler; Torys (acted for the lender) Funding: Public

• Federal: Atomic Energy of Canada Ltd.: \$1.28 billion Substantial Completion: Port Granby Project—2022; Port Hope Project-2025

The Port Hope Area Initiative (PHAI) is a federal environmen-

tal clean-up program. Its mandate is the remediation and local, long-term, safe management of approximately 1.7 million cubic metres of historic low-level radioactive waste in the municipalities of Port Hope and Clarington in southern Ontario. The historic waste resulted from the radium and uranium refining operations of the former Crown corporation, Eldorado Nuclear Limited, and its private sector predecessors, which operated until 1988.

The PHAI has two projects: the Port Hope Project and the Port Granby Project.

The Port Hope Project involves the construction of an engineered aboveground mound and supporting infrastructure for the safe, long-term management of approximately 1.2 million cubic metres of historic low-level radioactive waste, cleanup of the waste from various major sites and small-scale sites in Port Hope and transportation of the waste to a new long-term waste management facility (LTWMF) currently under construction. After the facility is capped and closed, anticipated to be in 2025, ongoing maintenance and monitoring will continue for many years.

May 2022 marked the completion of the Port Granby Project, which involved the safe excavation and transfer of low-level radioactive waste from an unstable site to a newly constructed waste management facility.

Over 1.3 million tonnes of waste excavated from the Lake Ontario shoreline is now safely stored in the engineered, aboveground storage mound that was capped and closed in fall 2021.



Annacis Island Wastewater Treatment Plant Expansion \$1.27 billion



2022 Rank: 55

Location: Delta, B.C.

Owner: Metro Vancouver

Construction Manager: Hatch (outfall project); CDM Smith

(Overall Construction Coordination)

Contractors: JJM Construction and Geopac Inc. (Phase 1 ground improvement and 12.5 kV power feed relocation); Graham/AECON Joint Venture (Phase 1 treatment plant process structures and equipment); North American Construction (blowers contract); Kenaidan Contracting (computer control system and laboratory building, cogeneration and backup power); Maple Reinders Inc. (Phase 2 Gravity Thickeners and Aeration Tanks Retrofit); Bennett Mechanical Installations (Phase 2 Digester Heat Exchangers Upgrade); Pomerleau-Bessac General Partnership (outfall pipeline)

Engineers: Brown and Caldwell, Stantec, EIC Solutions, Klohn Crippen Berger (stage 5 expansion); CDM Smith, Golder Associates, McMillen Jacobs, Golder-a WSP company (outfall); Wood/Black & Veatch (cogeneration backup power); EXP

(geotechnical engineering & monitoring/instrumentation) Other Key Players AECOM (Stage 5 Phase 1 Design review);

WSP (materials engineering & testing), Wood-a WSP company (consulting engineer/geotechnical studies & materials tester); Hatch (tunnel design review and outfall construction management); Colliers Project Leaders; Jacobs; CDM Smith; Associated Engineering (project and construction management/

staff augmentation); Envirowest (environmental) **Legal:** Norton Rose Fulbright (for Metro Vancouver)

Funding: Public

Substantial Completion: (Phase 2 – Early Works) 2024; (Outfall) 2026; (Phase 2)2027+

There are over 20 projects planned as part of the onsite improvements of the Annacis Island Wastewater Treatment Plant. Key improvement projects include new trickling filters, secondary clarifiers, and a cogeneration facility to make better use of green energy captured on site. Detailed design of the remaining Phase 2 works is underway with construction anticipated to commence in 2025.



Port Lands Flood Protection and Enabling Infrastructure \$1.25 billion



2022 Rank: 56

Location: Toronto, Ont. **Owner:** City of Toronto

Project Manager: Waterfront Toronto; City of Toronto

Construction Manager: EllisDon

Contractor: Colliers Project Leaders; Arcadis; HDR; INTECH;

Altus; Geosyntec; Stantec; Entuitive; Grimshaw; Dillon

Engineer: Wood-a WSP company (consulting); WSP; Cherubini Metal Works Ltd.; DTAH; Planmac; Jacobs

Architect: Michael Van Valkenburgh Associates Inc. (Port Lands Estuary Plan)

Environmental Services: Arcadis Canada; Interfluve; GHD; GFL; Englobe; Geo-Solutions

Other Key Players: SBP; Golder-a WSP company (geotechnical services); A.W. Hooker Associates Ltd.; Hanscomb; HRI (heritage contractor); Earth Boring Co. Ltd.; Priestly Demolition Inc.

Supplier: DECAST Funding: Public

• The federal, provincial, and municipal governments are each contributing an equal share of \$416.6 million to this project.

Substantial Completion: 2024

The Port Lands Flood Protection and Enabling Infrastructure project is the redevelopment of one of the largest portions of underdeveloped land in a major urban core in North America. Located along the shore of Lake Ontario southeast of Toronto's downtown core, the project will include substantial soil remediation, a new mouth for the Don River, and critical infrastructure for flood resilience to unlock the 325-hectare site for residential and commercial development.



West Park Healthcare Centre \$1.2 million



2022 Rank: 57

Location: Toronto, Ont.

Owner: West Park Healthcare Centre **Project Manager:** Infrastructure Ontario

DBFM Team: EllisDon Infrastructure Healthcare—Cannon-Design, Montgomery Sisam Architects (design); EllisDon (constructor); EllisDon Facilities Services Inc. (facilities management provider); EllisDon Capital Inc. (financial advisor); Modern Niagara Toronto Inc., Ozz Electric (mechanical and electrical subcontractor)

Engineer: TMP (mechanical); Entuitive (structural)

Other Key Players: EXP (PDC services); HOK (PDC services); Deloitte; A.W. Hooker Associates Ltd. (independent certifier); EY (financial advisor); Aon (risk advisor); Hanscomb (cost consultant)

Funding: P3

Substantial Completion: 2023

The West Park Healthcare Centre is a new 730,000-sq.-ft hospital that will replace the existing facility. The new hospital will feature 314 beds, with 80 per cent of beds in single-patient rooms. Construction of the new hospital and landscapes is anticipated to be completed in 2023. The facility is completely enclosed; exterior paving, window and elevator installation, flooring and mechanical and electrical systems are underway. Following completion of the new hospital, the contractor will demolish the old hospital.



Thunder Bay Correctional Complex \$1.2 billion



NEW

Location: Thunder Bay, Ont.

Owner: Ontario Ministry of the Solicitor General Procurement/Projecct Manager: Infrastructure Ontario

DBFM Team: EllisDon Infrastructure Developer: EllisDon Capital Inc. Design-Builder: EllisDon Corporation

Design Team: Zeidler Architecture Inc., DLR Group Inc. Facilities Management: EllisDon Facilities Services Inc.

Financial Advisor: EllisDon Capital Inc. Funding: P3

Substantial Completion: 2026

Infrastructure Ontario is working with the Ministry of the Solicitor General to deliver a new Thunder Bay Correctional Complex, to replace the city's existing jail and correctional centre.

The project will result in development of a 345 bed, multipurpose correctional facility. This project supports the ministry's strategy of replacing aging institutions to address health, safety and security issues, including efficiencies of design, technology and space. It will improve access to programming, living conditions and education, while also updating automation and technology.

The correctional complex will be designed to meet the Leadership in Energy and Environmental Design (LEED) Silver certification.



CFB Esquimalt A/B Jetty Recapitalization Project \$1.1 billion



2022 Rank: 73

Location: Constance Cove, B.C.

Owner: Department of National Defence

Contractor: Pomerleau

Project Contract Management: Defence Construction Canada Engineers: Statec (design authority for "B" Jetty); Wood-a WSP

company (design)

Other Key Players: Hanscomb (design engineer's cost consultant for "A" Jetty); Advicas (design engineer's cost consultant for "B" Jetty); Golder-a WSP company (geotechnical studies/environmental engineering); Anchor QAE (environmental advisor); Hemmera (environmental); HDR (risk advisor); WSP (commissioning agent); Ruskin/CDI, RIC Power, Trotter & Morton,

Black & McDonald (subcontractors to Pomerleau) **Contractor:** Scansa Construction (utility corridor)

Funding: Public

Substantial Completion: 2030

The aim of the A/B Jetty project is to demolish and replace the old "A" and "B" jetties at CFB Esquimalt's Dockyard, which were constructed during World War II. The A/B Jetty project supports Canada's National Shipbuilding Procurement Strategy, which is delivering modern ships to the Royal Canadian Navy over the next 30 years. The new fully integrated A/B Jetty facility will be home to several of these Canadian-built vessels, including the new Arctic/Offshore Patrol Ship and Joint Support Ship, and in due course the future Canadian Surface Combatant ships. The implementation of this \$1.1 billion project has been advancing steadily over the past decade and it currently involves three primary contracts: one for the design & engineering work of the new "B" Jetty, one for the design & engineering work of the new "A" Jetty and one for the construction of the new jetty facilities.



North Shore Wastewater Treatment Plant Program \$1.058 billion



NEW

2021 Rank: 66

Location: North Vancouver, B.C

Owner: Metro Vancouver

Engineer: AECOM (design consultant, former

owner's engineer)

Contractor: PCL Constructors Westcoast Inc. (currently under construction management services

early works contract) **Architect: AECOM**

Legal: Norton Rose Fulbright (counsel for Metro Vancouver) Other Key Players: WSP (procurement); Golder-a WSP company (geotechnical evaluations); Wood-a WSP company (consulting and environmental engineer/geotechnical studies/ materials tester)

Funding: P3

Substantial Completion: TBD

The North Shore Wastewater Treatment Plant is a new tertiary treatment facility being built to replace the existing primary level Lions Gate Wastewater Treatment Plant on the North Shore.

The facility will feature an enclosed design and robust odour control system to prevent odour from reaching neighbouring residents and businesses, will recover heat for use in a nearby district energy system, and will include a public plaza, education, and community meeting spaces. Construction officially began in late August 2018. In 2019, the decision was made to move from secondary to tertiary treatment technology. In 2022, Metro Vancouver and PCL Constructors Westcoast Inc signed a pre-construction services contract to take the next steps to complete the North Shore Wastewater Treatment Plant and to create an updated plan to complete the project, including developing a revised project budget and schedule that is anticipated for 2023.

Yellowhead Trail Freeway Conversion Project \$1 billion

2022 Rank: 58

Location: Edmonton, Alta. **Owner:** City of Edmonton

Contractor: Standard General Inc., Lafarge Canada Inc., PCL

Construction Management Inc.

Consultants: AECOM, WSP, Stantec, CIMA+

Other Key Players: Wood (environmental engineering)

Funding: Public

• Federal: \$241.6 million

• Provincial: \$241.6 million

• Municipal: \$516.8 million **Substantial Completion: 2027**

The Yellowhead Trail Freeway Conversion Project will transition 15 kilometres of the current west-east roadway in Edmonton's north end to a free-flowing six-lane freeway, with a targeted speed of 80 km/h. The upgrade will eliminate eight intersections, build two new interchanges, modify three existing intersections, and build new collector roads. Construction on some of the connecting roadways began in 2019, while larger segments of the project started in 2020.

In 2022, the City of Edmonton continued with the design of the St. Albert Trail to 97 Street project. Edmonton-based PCL Construction Management Inc. has been selected to partner with the city to deliver the freeway conversion's keystone project. Construction of the 156 Street to St. Albert Trail project con-



tinued with the installation of utility infrastructure, bridge pier strengthening, retaining wall construction and the replacement of a noise attenuation wall. On the east of the corridor construction of the Fort Road Widening project continued with the focus primarily on utility installations and construction of the temporary rail bridge structures.



Micoua-Saguenay Transmission Project \$1 billion



2022 Rank: 59

Location: Côte-Nord to Saguenay-Lac-Saint-Jean, Que.

Owner: Hydro-Québec

Contractor: Groupe Conseil Nutshimit Nippour (Section 8 clearing operations); Midifor Inc. (Section 9 and 10 clearing operations)

Other Key Players: Englobe

Supplier: Locweld (steel transmission towers)

Funding: Public

Substantial Completion: 2023

The new 735-kilovolt transmission line will connect Hydro-Québec's Micoua and Saguenay substations. The line will run roughly 262 kilometres through the Côte-Nord region (approx. 200 kilometres north of Quebec City) northwest through to the Saguenay-Lac-Saint-Jean region. The new line will help strengthen the reliability of the transmission system in the province. The project is scheduled for completion by the end of 2023. The last contracts were awarded in 2021, all the deforestation of the 262-kilometre line is scheduled to end in 2021.



Place du Portage III Renewal \$1 billion



Location: Gatineau, Que.

Owner: Government of Canada

Project/Construction Manager: BGIS

Other Key Players: Perkins & Will, Provencher,

EllisDon Corporation

Funding: Public

Substantial Completion: 2027

The Portage III complex, currently serving as Public Services and Procurement Canada's headquarters, is the largest of the

four buildings that comprise the Place du Portage federal campus in Gatineau, Que. Built in the 1970s, the complex consists of: nine towers; commercial areas; four basement levels; and a three-level underground parking ga-

The renewal of Portage III encompasses a complete overhaul of both the inside and outside of the building, including modernized activity-based workplaces; a new energy-efficient building envelope and heating; (HVAC) system; a new accessible entrance and a completely revamped main entrance; and improved landscaping.





West Memorial Building Rehabilitation Project \$1 billion



NEW

Location: Ottawa, Ont.

Owner: Government of Canada

Project/Construction Manager: EllisDon Corporation

Design & Architectural Services: Moriyama & Teshima Architects, Kasian Architecture Interior Design and

Planning Ltd.

Funding: Public

Substantial Completion: 2024

Built in 1958, the West Memorial Building had remained vacant

since 2008 and had never undergone major repairs or renovations.

The Government of Canada is undertaking a comprehensive rehabilitation to modernize and conserve the West Memorial Building, making it more efficient, greener, safer and more accessible for occupants and visitors. When completed, the West Memorial Building will host the occupants and visitors of the Supreme Court of Canada Building while it undergoes its own reha-

After the Supreme Court of Canada Building project has been completed, the West Memorial Building will be used as long-term office space for future federal government occupants.



GO Kitchener Extension \$959 million



Location: Kitchener-Waterloo, Guelph, Halton Hills, Brampton, Mississauga, and Toronto, Ont.

Owner: Metrolinx

Engineer: Gannett Fleming, Aecom (Bramalea to Georgetown);

WSP (design/construction oversight)

Other Key Players: Canadian National Railway Company Funding: Public

Substantial Completion: TBD

The Kitchener GO extension will enhance train service over its outermost segment to offer a versatile regional travel option that runs outside rush hour. There will be more trips at every point along the line-from Kitchener-Waterloo, Guelph, Halton Hills, Brampton, Mississauga, and Toronto, through track work and new stations along the way, as part of an additional work on the Kitchener Corridor. Some of the work entails: track work: and Guelph locomotive relocation.



New Toronto Courthouse Project \$956.4 million



2022 Rank: 61

Location: Toronto, Ont.

Owner: Ministry of of the Attorney General

Project/Construction Manager: Infrastructure Ontario **DBFM Team:** EllisDon Infrastructure—EllisDon Capital Inc. (developer); EllisDon Design Build Inc. (constructor); Renzo Piano Building Workshop, NORR Architects & Engineers Limited (design); EllisDon Facilities Services Inc. and SNC-Lavalin O&M (facilities mgmt.); EllisDon Capital Inc. (financial advisor)

Engineer: WalterFedy (civil); Stephenson Engineering Ltd. (structural); The Hidi Group (mechanical); Mulvey & Banani International (electrical/security); Jacobs (environmental); Other Key Players: Wood-a WSP company (geotechnical studies); Morrison Hershfield (sustainability services for the lead contractor); A.W. Hooker Associates Ltd. (cost consultant); Aon (risk advisor); WT (independent certifier); Kleinfeldt Mychilowyz Architects Inc. & Montgomery Sisam Architects Inc. (planning design and compliance consultant) Architects: Renzo Piano Building Workship, NORR Architects

& Engineers Limited **Legal:** Blake, Cassels & Graydon (advisor to the proponent); McCarthy Tétrault (advisor for MAG, IO); Norton Rose Fulbright (advisor for SNC-Lavalin), Farris, Vaughan, Willis & Murphy (advisor for the lenders and hedge providers)

Funding: P3

Substantial Completion: 2023



The new Toronto Courthouse will amalgamate several Toronto courts located throughout the city. The building structure is complete, including 16 levels of cast-in place concrete and two levels of structural steel with metal deck. The building envelope is also nearing completion and will be air and watertight by the end of the summer. The curtainwall is complete on the East, South and West facade's, including the cable-wall system at this atrium level, with architectural precast panels on the North facade and elevator core. Finishes are ongoing in the atrium, including the finishing of the concrete columns, which are over 20 meters tall, ceiling installation, and the installation of quartz paneling at the feature stair area.







Port of Montreal Contrecoeur Terminal \$950 million



2022 Rank: 62

Location: Contrecoeur, Que. **Owner:** Montreal Port Authority

Other Key Players: ARUP (preliminary engineering);

Dentons (legal services); WSP (advisory services) Samson (fairness monitoring support);

PwC (commercial support)

Funding: Private

• Federal: \$300 million

(loan from Canada Infrastructure Bank)

• Provincial: \$55 million (subsidy)

Substantial Completion: 2026

By 2026, with the support of Canada Infrastructure Bank and private partners, the Port of Montreal intends to develop a new state-of-the-art container terminal.

The greenfield terminal will be fully connected to the regional transportation hub, including a Class 1 railroad and highway connections.

After receiving a favorable decision statement to proceed with the project and launching, in Q4 2021, an RFQ, qualified bidders were selected in Q2 2022 for the Request for Proposal phase. In Q3 2023, a private partner will be awarded the contract to design, build, finance, operate and maintain the terminal, with construction starting by the end of 2023.



Giant Mine Remediation Project \$934 million



2022 Rank: 63

Location: Yellowknife, N.W.T.

Owner: The Government of Canada (led by Crown-Indigenous Relations and Northern Affairs Canada with support from Public Service and Procurement Canada) and the Government of the Northwest Territories (led by the Department of Environment and Natural Resources).

Construction Manager: Parsons Inc.

Design Engineer: AECOM; Golder-a WSP company Environmental Services: Dillon Consulting; SLR; Blumetric Other Key Players: SRK Consulting; Wood-a WSP company (consulting engineer); Hatch; KPMG (commercial advisor); SRK Consulting; Arcadis Canada Inc.; Colliers Project Leaders;

McElhanney; Englobe; Stratos

Funding: Public

• Federal: \$903.5 million

Substantial Completion: 2025 to 2038

Between 1948 and 2004, operations at the Giant Mine site grew to encompass roughly 900 hectares, including several ponds and small lakes.

In 1999, the former operator entered receivership and the Government of Canada, and the Government of Northwest Territories became responsible for the site. Mining operations continued until 2004. Several environmental and site remediation needs were identified. This included cleaning up the 237,000 tonnes of arsenic trioxide dust left behind in underground chambers and 16 million tonnes of tailings, open pits, debris, and site infrastructure.

Today, the project's goals are to: minimize public health and safety risks; minimize the release of contaminants from the site to the surrounding environment; remediate the site in a manner that instills public confidence; and implement a remediation approach that is cost-effective and robust.



Highway 19 Extension \$899.4 million

NEW

Location: Laval, Que.

Owner: Ministère des Transports (MTQ) Construction of Saint-Saëns Interchange:

Project Management: CIMA+/IGF Axion Joint Venture

Design: WSP/EXP Consortium

Geotechnical Study: GHD Consultants Ltd.

General Contrator: Loiselle Inc.

Monitoring: CIMA+/Stantec Consortium

Quality Control: Englobe

Funding: Public

Substantial Completion: 2027

The project is located between boulevard Saint-Martin Est, in Laval, and Industriel, in Bois-des-Filion. It will be developed along the current axis of Route 335 and will extend over 11.8 kilometres. A dual carriageway urban freeway with three lanes in each

direction, including dedicated transit lanes, will be constructed. Construction work on the Saint-Saëns interchange in Laval began in the fall of 2021 and will continue until 2023.

The project also includes:

- · Construction of four new interchanges: boulevard Dagenais Est, rue Saint-Saëns Est, boulevard des Laurentides and boulevard des Mille-Îles, and route 344 (boulevard Adolphe-Chapleau).
- Redevelopment of the Highway 640 and Route 335 interchange.
- · Construction of a new bridge located east of the Athanase-David bridge, over the Rivière des Mille Îles.
- Repair of the current Athanase-David bridge.
- · Redevelopment and extension of the multipurpose path for pedestrians, cyclists, and off-road vehicle users.
- Reconfiguration of the service roads at the level of highways 440
- Development of a bus terminus and incentive parking.



Cowichan Hospital Redevelopment \$887.4 million



2022 Rank: 65

Location: Municipality of North Cowichan, B.C

Owner: Island Health

Other Key Players: Entuitive, WSP

Funding: Public

Substantial Completion: 2026

The Project consists of a replacement community-level hospital, with capacity for 204 inpatient beds, built to modern clinical and technical standards on a greenfield site in the Municipality of North Cowichan. The facility will provide patient care and programs to address future service needs for the region while including the following: total building area of approximately 46,000 square metres; capacity for core inpatient and ambulatory services, including a total of seven operating rooms, and additional procedure rooms and outpatient/ambulatory clinic capacity, expanded diagnostic imaging, and expanded emergency department capacity.

Two qualified teams, Alliance Care Partners and EllisDon + Parkin, have been shortlisted to participate in the next stage of the competitive selection process to design and construct the hospital, as part of a two-phase RFP process.



Route 185 Phase III \$883.3 million



Location: Saint-Atonin, Quebec to the New Brunswick border

Owner: Ministère des Transports (MTO)

Other Key Players: WSP (construction services), Tetra Tech, AECOM (construction supervision); Englobe

Funding: Public

- Federal: \$389.7 million
- Provincial: \$553.2 million **Substantial Completion: 2025**

This nearly 40-kilometre conversion to two-lane divided highway is the final step in the conversion of Route 185 to Autoroute 85, also known as Autoroute Claude-Béchard. The final portion runs from Saint-Antonin to Saint Louis-du-Ha!-Ha!, connecting Autoroute 20 at Notre-Dame-du-Portage to the New Brunswick

Work got underway in August 2019 and four of the seven sections have been commissioned.



Richmond Hospital Redevelopment \$861 million



2022 Rank: 66

Location: Richmond, B.C. Owner: Vancouver Coastal Health

Funding: Public

Substantial Completion: 2031

The Richmond Hospital Redevelopment Project will be conducted over four phases between 2022 and 2031. It is currently in Phase one: Park Centre and Rotunda decant and demolition. This project includes a new nine-floor acute care tower - the Yurkovich Family Pavilion - that will add 113 new beds to the hospital bringing the total to 353 beds. This project will feature a state-of-the art emergency department and intensive care unit, a fully equipped medical imaging department, a pharmacy and short-stay pediatrics unit to bring more services and better care for people in the growing Richmond community. The South Tower will be renovated to create new inpatient psychiatry and psychiatric emergency units and the Milan Ilich Pavilion will also be renovated and be home to the Cancer Care Clinic.



Advanced Nuclear Materials Research Centre \$800 million



NEW

Location: Chalk River, Ont. Owner: Atomic Energy Canada Limited

Project Manager: Canadian Nuclear Laboratories IPD Team: Chandos Construction Inc., Bird Construction Inc., M. Sullivan & Son Limited, Eclipse Automation, JP2G Consultants, RJC Engineers,

Merrick & Company, Modern Niagara, MSE, Plan

Group and Siemens. Funding: Public

Substantial Completion: 2028

The Advanced Nuclear Materials Research Centre ANMRC is not only the cornerstone of the Government of Canada's \$1.2 billion investment in the site revitalization of the Chalk River Laboratories, but also the future facility for Canada's worldclass research of next generation nuclear technologies.

The 10,000-square-metre ANMRC is expected to be critical to the life extension and long-term reliability of existing reactors, including Canada's fleet of CANDU reactors and other designs deployed around the world.

Construction of the new laboratory research complex is being managed via an integrated project delivery (IPD) agreement.





Ontario Public Safety Radio Network \$765 million



Location: Province of Ont. **Owner:** Government of Ontario

Project/Construction Manager: Bell Mobility

Other Key Players: Motorola Solutions Canada; Williams Communications; Cartel Communications, Inc.; CIMA+; Entuitive

Funding: Public

Substantial Completion: 2023

The project aims to renew a radio network used by 38,000 frontline and emergency responders over 750,000 square kilometres. The contract to build the system's land mobile radio network-which includes core infrastructure, support antennas, servers, and data centre equipment—was awarded to Bell Mobility Radio. It will also provide first responders, as well as their dispatchers, with new radio equipment and consoles and provide network and radio equipment maintenance services for 15 years.



Great Plains Power Station \$760 million

2022 Rank: 70

Location: Moose Jaw, Sask.

Owner: SaskPower

EPC Contractor: Burns & McDonnell

Other Key Players: PCL Industrial;

KMS Construction Ltd.:

Allan Construction; Soletanche Bacy Canada;

Quorex Construction; Innovative Piling Solutions; Inland Concrete; Supreme Steel

Funding: Public

Substantial Completion: 2024

The Great Plains Power Station is the latest natural gas power plant being constructed in Saskatchewan, following the successful completion of the Chinook Power Station in 2019. The Great Plains Power Station is being constructed as a 350-Megawatt combined cycle plant, very similar to specifications of the

In 2022, construction of the pilings, foundations, and underground installations was completed. As well, the steam turbine and generator arrived, and the erection and insulation installations continued to support enclosing the building. Powerhouse mechanical and electrical installations are also in progress.



Corner Brook Acute Care Hospital \$750 million



2021 Rank: 71

Location: Corner Brook, N.L.

Owner: Government of Newfoundland and Labrador (to be turned over upon completion to the Western Health

Regional Health Authority)

Project/Construction Manager: Corner Brook Care

Team—B+H Architects, Montgomery Sisam Architects,

Marco Construction

DBFM Team: Corner Brook Health Partnership—Developer and equity member: Plenary Group, Equity member: PCL Investments Canada Inc., Design-builder: PCL Constructors Canada Inc., MarcoMechanical-electrical

Contractor: Cahill Group, Plan Group Architect: B+H Architects, Parkin Facilities Management: Johnson Controls **Contractor:** Marine Contractors of Pasadena

(site excavation and grading); Brook Construction (underground concrete water reservoir)

Engineer: WSP (structural & civil)

Other Kev Players: Hanscomb (functional

programmer's cost consultant); INTECH Risk Management; EY (financial advisor); AGAT Labs;

Aon (risk advisor)

Legal: Torys (owner); Borden Ladner Gervais

Funding: P3

Substantial Completion: 2023

The new acute care hospital is a seven-story, 600,000 sq. ft. facility, which will be connected to the 145-bed long-term care home, which was recently constructed.



Carillon Generating Station Refurbishment Project \$750 million



Location: Saint-André-d'Argenteuil, Que.

Owner: Hydro-Québec

Design: WSP

Supplier: Andritz (turbines)

Funding: Public

Substantial Completion: 2027

Hydro-Québec will invest \$750 million to refurbish its Carillon generating station, mainly to replace six generating units. Carillon generating station is a run-of-river power plant consisting of 14 generating units with a total installed capacity of 753 MW. Built in the early 1960s, it is a key part of Hydro-Québec's hydroelectric generating fleet. The station is close to the greater Montréal area and feeds power into the grid during peak consumption periods.





Rehabilitaion of Robert-Bourassa Generating Units \$732 million

2022 Rank: 74

Location: Baie-James, Que.

Owner: Hydro-Québec

Contractor: GE; TRANSAR

Other Key Players: EXP (plans and specs for mechanical systems); McElhanney; Englobe; WSP (engineering)

Funding: Public

Substantial Completion: 2022

Robert-Bourassa generating station is one of the crown jewels in Hydro-Québec's generating fleet. With an installed capacity of 5,616 MW, it is the most powerful generating facility in Québec. Its longevity is essential to ensuring the long-term supply of reliable power in Québec. This project includes the rehabilitation of eight of the sixteen generating units of the Robert-Bourassa generating station, as well as the speed governors, static excitation systems and cooling systems in all sixteen units. The DEW generating units (made by Dominion Engineering Works) will be the ones rehabilitated, as they



show the most signs of wear. This work will allow Hydro-Québec. to optimize its facilities and adequately secure Québec's energy future. Project completion is targeted for 2022, which will see such milestones as the final assembly of the seventh generating unit (out of a total of eight to be



Highway 104 Project \$718 million The

2022 Rank: 75

Location: Sutherlands River to Antigonish, N.S. **Owner:** Nova Scotia Department of Public Works

DBFOM Team: Dexter Nova Alliance

· Contractors: Dexter Construction, Nova Construction

• Equity Partner: BBGI

Design: WSP, Harbourside Engineering

Other Key Players: EY; CBCL Limited; Aird & Berlis; Wood-a

WSP company (inspection & testing services)

Funding: P3

Substantial Completion: 2023

The Highway 104 twinning project includes 28 kilometres of new two-lane twinned highway and 10 kilometres of new four-lane twinned highway from Sutherland's River to Antigonish. There are two new interchanges, 24 new bridges, as well as upgrading existing sections of the highway. As of December 6, 2022, segment 4B/4C between Exit 30 (James River) and Exit 31 (West of Antigonish) was open. Remaining segments will be open as work is complete. The project remains on schedule, and it is anticipated that construction will be complete by end of 2023.



Faro Mine Remediation Project \$700 million



2022 Rank: 92

Location: Faro, Yukon

Owner: Government of Canada

Construction and Care and Maintenance Manager: Parsons Inc.

Remediation Design Engineer: AECOM Canada Ltd. Other Key Players: Ensero Solutions Canada Inc. (environmental monitor); CH2M Hill Canada Ltd.

(water treatment plant designer), Tetra Tech Canada Inc., WSP (geotechnical services); Golder-a WSP company

(environmental assessment) Funding: Public

Substantial Completion: 2039

Faro Mine is a former open-pit lead-zinc mine, one of the largest of its kind in the world at approximately 25 sq. km. It is located in south-central Yukon on the traditional territory of the Kaska Nations, near the town of Faro. Abandoned in 1998, resource extraction led to 70 million tonnes of tailings and 320 million tonnes of waste rock. Care and maintenance work since then has helped to ensure water quality so that environmental standards are met.

In 2020, the construction of the North Fork Rose Creek realignment and associated contact water collection system was completed. In 2021 additional urgent works to collect contact water and increase water treatment capacity have been completed. Active remediation is expected to begin in 2025 following the successful completion of the Yukon environmental and socio-economic assessment process, and receipt of a water licence from the Yukon Water Board. Remediation is expected to take about 15 years to complete, followed by ongoing operations and monitoring.



Cape Breton Regional Hospital Expansion \$700 million



NEW

Location: Sydney, N.S.

Owner: Nova Scotia Public Works

Construction Manager: Pomerleau Lindsay Health

Care Partners

Other Key Players: Cannon Design; EXP, H.H. Angus; ERA Archtects, Kazian (planning design & compliance services); A.W. Hooker Associates Ltd. (independent certifier); Aon (insurance advisor); Hanscomb (cost consultant)

Funding: Public

Substantial Completion: 2028

The project—a major component of the CBRM Healthcare Redevelopment Project—a new Clinical Services Building that will house a new, larger emergency department, critical care department, more inpatient beds, surgical suites, maternal/newborn services, and a new cardiac catheterization lab, and a new Energy Centre. Site preparation began in 2020 with foundation work last year and the first structural steel going up in June 2022. Construction is underway on the Energy Centre and Cape Breton Cancer



Bowmanville Extension Project \$655 million



2022 Rank: 77

Location: Bowmanville, Ont.

Owner: Metrolinx

Other Key Players: Wood-a WSP company (consulting engineer/geotechnical studies/environmental assessment), Stantec (technical advisory services); Deloitte, Golder, AECOM

Funding: Public

Substantial Completion: 2024

Building on the recommendations of the Bowmanville Expansion Initial Business Case (IBC) approved at the February 2020 Metrolinx Board meeting, the Preliminary Design Business Case confirms the feasibility of the alignment identified in the IBC, while examining two different weekend service options. The alignment proposes one new track plus sidings and passing tracks where necessary through Oshawa GO station connecting to CP's GM spur line to cross Highway 401, making an eventual connection through CP's Belleville Subdivision to Bowmanville.

When service opens in 2024, the line will provide four morning trips along the line to Union Station in downtown Toronto, and four afternoon trips making all station stops to the new Bowmanville station.





SRB PIE-IX BRT Integrated Project \$652.7 million



2022 Rank: 79

Location: Montreal & Laval, Que.

Owner: Autorité régionale de transport métropolitain (ARTM) / Ministère des Transports (MTQ) / City of Montréal

Delegated Manager: Société de transport de Montréal (STM) Contractors: Pomerleau; EBC; MGB; G-Tek; Demix; Hudson Six; Roxboro

Engineers: SNC-Lavalin (consulting); WSP; AECOM; FNX Innov Other Key Players: WSP (pre-feasibility study); CIMA+

Legal: Borden Ladner Gervais

Funding: Public

• ARTM & MTQ: \$472.5 million

• City of Montreal: \$180.2 million **Substantial Completion: 2023**

ect, integrating the rehabilitation of municipal infrastructures and the reconstruction of Pie-IX Boulevard. It is also a public transit infrastructure spread across 11 km, between Saint-Martin Boulevard in Laval and Pierre-De Coubertin Avenue in Montréal, including 38 BRT bus shelters and bus priority lights in real time. The Pie-IX BRT service launched in November 2022, from Saint-Martin Boulevard in Laval to Pierre-De Coubertin Avenue in Montréal. The BRT shelters at Jean-Talon and Bélanger will be commissioned in 2023, due to the ongoing construction work on the pedestrian tunnel from the Pie-IX BRT to the future Blue line extension métro station. The Pierre-De Coubertin BRT shelters and the reserved lanes on the Pie-IX Bridge will also be ready in 2023, once the work at Pie-IX station has been completed.

The Pie-IX BRT is a leading, high-performance public transit proj-





Highway 401 Expansion Project \$649 million

2022 Rank: 78

Location: Milton to Mississauga, Ont. **Owner:** Ontario Ministry of Transportation **Project Manager:** Infrastructure Ontario

Construction Manager: WSP

DBF Team: West Corridor Contractors

- Developer: Aecon infrastructure Management Inc. (Aecon), Parsons, Amico Design Build Inc. (Amico)
- Constructors: Aecon, Amico, Parsons
- · Designers: Parsons (Lead Designer), Hatch, EXP
- Financial: National Bank Financial

Engineer: Hatch; Parsons (consulting)

Other Key Players: Operis (financial services); Morrison Hershfield (structural design review); A.W. Hooker Associates Ltd. (independent certifier); AECOM; Aon (risk advisor); DECAST; EllisDon; Golder-a WSP company (geotechnical services); Comtech (project management consultant)

Funding: P3

Substantial Completion: 2023

The Highway 401 expansion project consists of an approximately 18-kilometre-long stretch within the western part of the Greater Toronto Area, from the Credit River in Mississauga to Regional Road 25 in Milton. This portion of highway feeds into the northwest corner of Toronto, passing by Pearson International Airport before stretching across the top of the city heading east. The expansion project will create: 12 lane core-collector system from the Credit River to Winston Churchill Boulevard; 10 lanes from Winston Churchill Boulevard to Highway 407 ETR/ Highway 401 interchange; 12 lane core-collector system from Highway 407 ETR/ Highway 401 interchange to east of the James Snow Parkway; 10 lanes from the James Snow Parkway to west of Regional Road 25; median HOV lanes; and support facilities and features-drainage, lighting, signage, ATMS, carpool lots, etc.



Mills Memorial Hospital Replacement Project \$632.6 million



2022 Rank: 81 **Location:** Terrace, B.C.

Owner: Northern Health Authority

Design-Build: PCL Westcoast Constructors Inc.

Architect: HDR Architects (subcontracted by PCL)

Other Key Players: WSP (owner's engineering representative) Funding: Public

- Province of B.C.: \$512.4 million
- North West Regional Hospital District: \$120.2 million **Substantial Completion: 2026**

The new Mills Memorial Hospital will be more than double the size of the existing facility. The new, state-of-the-art facil-

ity is being designed to address the current and future needs of patients in Northwest BC. The acute care hospital and integrated services facility will be a centre for trauma services, orthopedic surgeries, pathology, radiology, clinical support, and pharmacy services. The hospital will also be a training site for medical students in the Northern Medical Program. The Mills Memorial Hospital Replacement project also includes the construction of a new Seven Sisters mental health facility. The new Seven Sisters will be nearly double the size of the current facility. In addition to an increase in beds, from 20 to 25, the new Seven Sisters will include more amenities. Both new facilities are being built on the same 17-acre property on which the current ones are located.



Bonnybrook Wastewater Treatment Plant D Expansion \$630 million



2022 Rank: 80

Location: Calgary, Alta. **Owner:** City of Calgary

Project/Construction Manager: Graham Construction Project Team: Balzers Canada Inc. (Mechanical Contractor); The Vector Group (Electrical Contractor); InCom Electric Corp (Electrical Contractor); Standard General Inc. (Underground); Whissell Contracting Ltd. (Underground); KLS Earthworks & Environmental

Engineer: Stantec; Jacobs; AECOM; Wood-a WSP company (environmental)

Other Key Players: Hanscomb (owner's design stage cost consultant); Aon (owner advisor and construction insurance broker); WPC Water Solutions; AGAT Labs

Legal: Blake, Cassels & Graydon (advised the City of Calgary) Funding: Public

• Municipal: \$600 million **Substantial Completion: 2026**

Bonnybrook Wastewater Treatment Plant is the largest of three wastewater treatment plants serving Calgary and area. Originally built in the 1930's, Bonnybrook is undergoing its most substantial upgrade to date. With an investment of more than \$1-billon dollars over the span of 10 years, it is expected that Bonnybrook will see its total treatment capacity increase to nearly 1.4 million citizens when completed in 2026.

At Plant D, the greatest number of projects were completed and commissioned including the installation of two new primary clarifiers and six additional secondary clarifiers. This project also entailed the construction of three secondary treatment bioreactors and retrofits and upgrades to existing solids handling digesters, and the UV disinfection facility. Lastly, as part of this Plant D upgrade, a new bio-gas handling storage facility was completed and commissioned.



GO Expansion – Off-Corridor \$619 million



2022 Rank: 82

Location: Greater Toronto-Hamilton Area, Ont.

Owner: Metrolinx

Concept Design: 4TRANSIT JV (Parsons, WSP & Hatch)

Other Key Players: Parsons (systems work);

Golder-a WSP company (geotechnical services); Deloitte,

Comtech (project management. services); AECOM;

Wood-a WSP company

Funding: Public

Substantial Completion: 2025

The Off-Corridor Works package is one of the three packages of work through which the GO Rail Expansion program is being delivered. The Existing Stations Renovations project forms the majority of the Off-Corridor Works package and will involve improvements at existing multi-modal stations along the Lakeshore West, Milton, Barrie, Kitchener, Lakeshore East, Stouffville, and Richmond Hill GO Rail Corridors. The comprehensive goal of the Off-Corridor program is to improve multi-modal station access across GO Transit to support forecasted ridership growth, as well as provide more local service integration with subways, streetcars, LRTs, buses, etc.



Rapide-Blanc Generating Station Refurbishment Project \$613 million



2022 Rank: 83

Location: Rapide-Blanc, Que.

Owner: Hydro-Québec

Contractor: Voith (installation of new turbines, generators, and digital governors, as well as the refurbishment of embed-

ded turbine components)

Engineer: WSP (design); EXP (design)

Other Key Players: Englobe

Funding: Public

Substantial Completion: 2026

The Rapide-Blanc generation station is located on the Saint-Maurice River, 66 km north of La Tuque, Québec. The station's initial construction began in 1930 and was completed in 1934. All of the six units will be replaced. Four of the existing turbines were installed in 1934, which means by the time the project is complete those units will have been in service for 90 years. The contract for the new units calls for a complete replacement of removable turbine and generator parts, the refurbishment of all embedded components and installation of digitally controlled governor units. The new units will also be more efficient and allow production of approximately 10 per cent more energy with



the same amount of water. The components will be designed to last at least 70 years. The site work and assembly will begin in 2021 and, after commissioning, the contract is expected to be completed by the end of 2025.

Lake St. Martin and Lake Winnipeg Outlet Channel project \$600 million



Location: Interlake, Man.

Owner: Government of Manitoba

Contractor: Multiple (TBD)

Engineer: Hatch; KGS Group; Tetra Tech

Environmental Services: Stantec; North/South Consultants Inc.; WSP Global Inc.; and Magellanicum Ecological Services

Funding: Public

• Federal: \$247.5 million

• Provincial: \$292.5 million **Substantial Completion: 2025**

In 2011, southern Manitoba experienced widespread flooding and Lake Manitoba experienced excessively high inflows through the Waterhen River, Whitemud River, and the Portage

Diversion. Construction of the Lake Manitoba and Lake St. Martin Outlet Channels Project (Outlet Channels Project) will enhance flood protection to the surrounding area and help to strengthen Manitoba's existing network of flood mitigation infrastructure. The \$600 million flood protection project consists of a 24.6 kilometre (km) long channel from Lake Manitoba and a 23.6 km long channel from Lake St. Martin. The Lake Manitoba outlet channel includes an inlet at Lake Manitoba and outlet at Lake St. Martin, a new water control structure with a bridge and three new bridge crossings over the outlet channel. The Lake St. Martin outlet channel includes an inlet at Lake St. Martin and outlet at Lake Winnipeg, a new water control structure with a bridge, as well as the necessary Manitoba Hydro infrastructure to power the control structure.





West Calgary Ring Road \$552 million

2022 Rank: 87

Location: Calgary, Alta.

Owner: Alberta Transportation

Contractor: EllisDon (North Section); FlatIron/Aecon (Bow River Bridge Twinning); Calgary Safelink Partners—Carmacks Enterprises Ltd., Graham Infrastructure LP, VINCI Infrastruc-

ture Canada Ltd. (South Section)

Engineer: Hatch (lead); Wood-a WSP company (consulting);

Tetra Tech (design); Parsons (consulting)

Other Key Players: Deloitte (financial advisor); Burns & Mc-Donnell (electric utility relocations); Parsons; Englobe; Mor-

rison Hershfield (quality control) Funding: Public

Substantial Completion: 2024

The 11-kilometre project is divided into three segments: the south one that connects with the Southwest Calgary Ring Road, the north one that meets the Trans-Canada Highway, and a new bridge across the Bow River. The north segment, running between Old Banff Coach Road and the Trans-Canada Highway, will be constructed by EllisDon. The project was tendered at a cost of \$463 million.

The West Bow River Bridge twinning project will be built by Flatiron and Aecon and has been tendered at a cost of \$89 million. The contract for the south portion of the road was awarded in June 2020. The West Calgary Ring Road will be open in 2024, one year following the expected completion of the Southwest Calgary Ring Road project. When complete, the entire Calgary Ring Road will provide travellers with 101 kilometres of free-flow travel.



Route 389 Improvement Program \$525 million

2022 Rank: 89

Location: Baie-Comeau, Que. to the Newfoundland-Labrador border

Owner: Government of Quebec

Contractor: Dexter Quebec (projet C); Groupe Alfred Boivin (projet B)

Other Key Players: BPR/AXOR Experts-Conseils Consortium (planning and specifications north of Manic-5); Roche-TDA Consortium, in conjunction with Inspec-Sol (GHD) (environmental assessment); WSP (route design work)

Funding: Public

• Federal: \$183 million • Provincial: \$342 million **Substantial Completion: 2025** This 570-kilometre highway joins the city of Baie-Comeau in Quebec with the Newfoundland-Labrador border. The improvement program is key in the development of Plan Nord, as it will improve access to lands north of the 49th parallel. The program is divided into five individual projects: Project A: from Fire Lake to Fermont; Project B: Baie-Comeau to Manic-2; Project C: winding sector north of Manic-Five; Project D: Manic-2 north of Manic-3; Project E: Manic-3 North to Manic-5.

After the commencement of Project C in 2019, Project B got underway in May 2020. Project C carries a cost of \$27 million, while Project B represents an investment of \$121.8 million.

Work has taken place on sections of the road, including Project C (completed) and parts of Projects D and E. Project B has been under construction since 2020.



BMO Convention and Trade Centre Expansion Project \$500 million



2022 Rank: 90 Location: Calgary, Alta.

Owner: Calgary Stampede

Development Manager: Calgary Municipal Land Corporation

Construction Manager: PCL Construction Engineer: Tetra Tech (design); Entuitive

Architect: Stantec, S2 Architecture; Populous (planning and

Other Key Players: M3 Development, Wood-a WSP company (materials tester)

Funding: Public • Federal: \$166.6 million

• Provincial: \$166.6 million • Municipal: \$166.6 million

Substantial Completion: 2024

The 565,000 sq. ft. expansion will more than double the size of the BMO Convention and Trade Centre to a total of more than one million square feet, transforming it into western



Canada's largest convention venue and creating new spaces for conferences, meetings, exhibitions and consumer shows. The Calgary Stampede and Calgary Municipal Land Corporation unveiled the design for the new Centre in 2020, and the project has made significant progress since, with the installation of the 9,000 metric tonnes of steel that comprise the building's impressive structure on track for completion by the end of 2022. The project is scheduled for completion by June 2024.





GO Bus Infrastructure \$500 million



2022 Rank: 91

Location: Greater Toronto-Hamilton Area, Ont.

Owner: Metrolinx **Engineer:** Hatch

Other Key Players: Comtech (project mgmt. consultant);

Wood-a WSP company Funding: Public

Substantial Completion: 2025

Metrolinx continues to invest in GO Bus Infrastructure throughout its GTHA network, including significant upgrades to several of its stations. The upgrades are complimentary to the work being done to expand rail service throughout the same corridor. As of mid-2021, more than 80 per cent of the project budget had already been spent (\$400 million).



Michael Garron Hospital project \$498.2 million



2022 Rank: 93

Location: Toronto, Ont.

Owner: Toronto East Health Network **Project Manager:** Infrastructure Ontario

DBF Team: EllisDon Infrastructure Healthcare—EllisDon

Design Build Inc. (design-builder); B+H Architects, Diamond Schmitt Architects (design); Mulvey & Banani International Inc., Crossey Engineering Ltd.,

Stephenson Engineering Ltd., WalterFedy (engineer); EllisDon Capital Inc. (financial advisor);

WSP (commissioning agent)

Other Key Players: Cannon Design; EXP, H.H. Angus; ERA Archtects, Kazian (planning design & compliance services); A.W. Hooker Associates Ltd. (independent certifier); Aon (insurance advisor); Hanscomb (cost consultant); Wood-a WSP company (geotechnical studies)

Legal: Gowling WLG; Blake, Cassels & Graydon (advisor to the project team)

Funding: P3

Substantial Completion: 2024

The Michael Garron Hospital - Phase 1 New Patient Care Tower Project involves the construction of a new patient care tower and three-story connection, as well as demolition of some existing space and renovations to the existing hospital. The project includes: The creation of an eight-storey Ken and Marilyn Thomson Patient Care Centre and adjoining three-storey building at the corner of Coxwell and Sammon Avenues; Demolition of several outdated wings (A, B, C, E, F wings and D podium); Four storey underground parking lot; and Renovations to existing spaces.



Yukon Resource Gateway Project \$468.8 million 1

2022 Rank: 95

Location: Yukon Territory

Owner: Government of Yukon

Engineer: WSP (bridge design)

Other Key Players: Wood-a WSP company (geotechnical studies); Associated Engineering (preliminary design); Tetra Tech (water sampling and ARD/ML assessment); Pelly Construction (contractor for Carmacks Bypass Project)

Funding: Public/Private

- Federal: \$247.3 million
- Territorial Government: \$112 million
- Private: \$108 million (local industry)

Substantial Completion: 2031

The Yukon Resource Gateway Project will upgrade infrastructure for up to 650 kilometres of existing roads in areas with high mineral potential active mining in the Yukon. That includes replacing road surfaces, bridges, and culverts. The Yukon government is working in collaboration with Yukon First Nations to seek input and finalize Project Agreements for components of the Yukon Resource Gateway Program within their Traditional Territories. Six Project Agreements have been signed for seven components with Yukon First Nations to date. The program will



provide opportunities to Yukon First Nations through short and long-term employment options, training and benefits agreements. Construction will improve access to mineral rich areas of the Yukon and will provide long-term national benefits in addition to local opportunities. Construction activities have begun on the Nahanni Range Road and Carmacks Bypass components. Future projects will follow as Project Agreements with Yukon First Nations are reached and implemented.



Centerm Expansion Project \$454 million 🕹



2022 Rank: 96

Location: Vancouver, B.C.

Owner: Vancouver Fraser Port Authority and DP World

Engineer: AECOM (Owner); Hatch/Moffat and

Nichols (Contractor)

Project/Construction Manager: Centennial Expansion Partners (CXP), a joint-venture between Dragados Canada, Jacob Brothers Construction, and Fraser River Pile &

Contractor: Hatch; Moffat and Nichol; EXP; Mott Electric;

PNR; Clearview; Hemmera; VIA

Other Key Players: WSP (proactive infrastructure

consulting); AECOM; PBX Engineering;

Klohn Crippen Berger;; RAM Engineering; Guidewire,

Allman Safety Funding: Public Federal: \$28.5 million **Substantial Completion: 2023** The Vancouver Fraser Port Authority is leading the Centerm Expansion Project to help meet increasing demand for containers shipped through the Port of Vancouver. It will increase container handling ability at Centerm Terminal by two-thirds, from 900,000 20-foot equivalent unit containers (TEUs) to 1.5 million TEUs. By increasing the terminal footprint by only 15 per cent and rearranging the terminal operations, the terminal will be able to handle a more than 60 per cent increase in containers.

In 2022 the Heatley Avenue overpass was demolished, part of the South Shore Access Project. The removal of the Heatley Avenue overpass was required to realign Centerm Terminal's intermodal yard to the CP and CN rail yard, to make way for the re-alignment of Waterfront Road and to complete the project.

Demolition began in July 2021 with the removal of the DP World's former operations centre at the foot of the Heatley Avenue overpass and continued in phases. The removal of the structure over the railways began in April 2022 and was completed in September 2022.



Arts Commons Transformation Project \$450 million



Location: Calgary, Alta.

Owner: City of Calgary/Arts Commons

Project Manager: Calgary Municipal Land Corporation

Project Manager: Colliers Project Leaders

Construction Manager: EllisDon

Engineer: Entuitive, Reinbold/Altiere Sebor Weiber, Crossey

Engineering with Designcore

Architect: KPMB, Hindle Architects, Tawaw Architecture Col-

letive Inc., SLA

Other Key Players: Threshold Acoustics, Fisher Dachs Associates, AMS Planning and Research, Venue Consulting and A.W.

Hooker Associates Funding: Public

Budget: \$450M (Phase 1 Expansion \$240M, Phase 2 Moderniza-

tion \$210M)

City of Calgary's Greater Downtown Plan - \$80M City of Calgary's Municipal Sustainability Initiative - \$25M CMLC's Community Revitalization Levy - \$135M **Substantial Completion: 2028**

A vivid demonstration that great cities invest in their futures, the Arts Commons Transformation will expand and modernize Calgary's premier performing arts centre while nurturing revitalization of the city's downtown core. Design for the fully funded \$240 million expansion, a new building on the Arts Commons campus, is underway and will break ground in 2024. A capital campaign will launch in 2023 to secure the remaining funds to re-imagine and modernize the existing Arts Commons facility. When complete, the Arts Commons Transformation will give Calgary a modern, welcoming, and inclusive arts centre and performance venue right in the heart of the city.



Springbank Off-stream Reservoir \$432 million



2022 Rank: 97

Location: Calgary, Alta.

Owner: Government of Alberta

Engineer: Stantec; Golder-a WSP company (environmental);

Wood-a WSP company (consulting)

Environmental Services: Stantec

Legal: McLennan Ross (Counsel for the Government of Alberta); Osler (advisor to the Government of Alberta)

Funding: Public

Substantial Completion: 2024

The Springbank Off-stream reservoir represents the Govern-

ment of Alberta's solution to mitigate severe flooding along the Elbow River, like what took place in June of 2013. Current plans call for a dry reservoir with a capacity of 70.2 million cubic metres, with an outlet structure to safely release the water back to the river when safe to do so. The reservoir will be located approximately 15 kilometres west of the City of Calgary. In October 2021 voluntary agreements were reached with landowners to secure the 3,700 acres of land needed for the project. The tendering process for construction has begun, with tenders sent to pre-qualified bidders. Construction is slated to begin in early 2022. Alberta Environment and Parks will be responsible for the operation of the project once construction is complete.





Canadian Joint Incident Response Unit Infrastructure Project \$415 million



NEW

Location: Trenton, Ont.

Owner: Department of National Defence

Project Contract Management: Defence Construction Canada

Contrator: Pomerleau

Engineers: Stantec (under contract with Pomerleau as a Modi-

fied Design Build) Funding: Public

Substantial Completion: 2029

This project will see the construction of approximately 30,000 square metres of modern and secure training facilities and spaces to support the Canadian Joint Incident Response Unit (CJIRU) at 8 Wing Trenton.

This construction will include general facilities like office areas, meeting rooms, and a wash bay; training facilities; physical training facilities; warehouse space; and more.

The conceptual contract design for this project was awarded to Pomerleau Inc. in August 2019.



Champlain Bridge Deconstruction Project \$400 million

2022 Rank: 99

Location: Montreal, Que.

Owner: Jacques Cartier and Champlain Bridges Incorporated (JCCBI)

Construction Manager: CCF (Consortium CIMA+, FNX Innov) Contractor: Nouvel Horizon St-Laurent GP: Pomerleau, Delsan A.I.M. Environmental Services Inc.

- Engineer: American Bridge Company, SNC-Lavalin, T.Y.Lin International Group, Harbourside, ARUP
- Design: Universal Structures Inc.

Engineer: PTA – Parsons, TeraTech, Wood-a WSP company (environmental); McElhanney (consulting)

Other Key Players: Aon (risk advisor); EY (mgmt. consultant)

Supplier: Canam Group Funding: Public

Substantial Completion: 2024

The Champlain Bridge (also known as Pont Champlain) was a steel truss cantilever bridge with viaducts constructed of prestressed concrete beams. It crosses the Saint Lawrence River, connecting the Island of Montreal to its South Shore suburbs. Opened in 1962, the structure was degraded by de-icing salt. In 2015, construction began downstream on a replacement bridge designed to handle higher volumes of traffic. The replacement



bridge opened on July 1, 2019, and the old Champlain Bridge was closed to traffic. The deconstruction project of the bridge will consist of three methods:

- 1. The deconstruction of the shoreline sections will be carried out from jetties set up along the river using standard equipment (excavators and cranes.)
- 2. Work from the river, which will be required for over 65 per cent of the project, will be done with a system of platforms attached to high-capacity lifting towers installed on a catamaran
- 3. In January 2022, the main span located over the Seaway, the enormous 117.5-m long and 2,200-tonne component, was lowered 33 metres with strand jacks installed on anchor spans on each side, onto an assembly of two barges in the middle of the



Fairbank Silverthorn Storm Trunk Sewer System \$400 million

NEW

Location: Toronto, Ont. Owner: City of Toronto

Contract 1: EBC Bessac Joint Venture (Quebec/France)

Contracts 2 & 3: In procurement

Environmental Services: United Soils Management

(soil disposal subcontractor)

Funding: Public

Substantial Completion: 2026

The City of Toronto, with support from the Government of Canada, is making a significant investment in storm water infrastructure to protect the Fairbank-Silverthorn community from basement and surface flooding. The project will construct a three-kilometre long and 4.5-metre diameter storm trunk sewer, 17-km length of storm collector sewers and install 325 inlet control devices to control stormwater going to catch basins. When construction is complete, the new infrastructure will help to reduce sewer backups and basement flooding for more than 4,645 homes and provide flood protection to a 140-hectare area. The first contract to construct the storm trunk sewer and some storm collector sewers is underway. Several shafts have been completed and others are being constructed in anticipation of tunneling work, set to commence in early 2023.

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