

Jasper Boychuk, P.Eng., ing.

ENGINEER – PROJECT MANAGER – DRONE PILOT JGIC SENIOR PROJECT ENGINEER DRONE PROJECT'S STATUS ANALYSIS PILOT

1. PROFILE

Jasper Boychuk holds a bachelor's degree in Civil Engineering. With his 15 years of experience in engineering, construction, project management, asset management and innovation. He has worked on over \$5 billion dollars in public infrastructure projects over the course of his career.

In pursuit of becoming a well-rounded and effective engineer, Jasper began his career working in the field with general contractors to understand how infrastructure is built; then moved into an owners engineering role representing the public interest on critical international bridge infrastructure. After years of working with engineering consultants, it was time to explore the engineering consulting environment where Jasper inspected and worked on some of the oldest and most iconic bridges in the national capital region.

With a well-rounded experience as contractor, owner and consultant, Jasper set out to explore life as an independent engineering consultant and contract worker. With a passion for innovation and technology, Jasper has equipped himself with tools to push the envelope of what is possible in terms of asset inspection, surveying and construction supervision and monitoring.

Drone Project Status Forward Planning and Forensic.

2. DRONE IMAGERY SUPPORT

Enhancing Forensic CPM Analysis: Our drone imagery services provide precise, real-time aerial views, enabling accurate reconstruction and analysis of project schedules. This visual data supports the identification of delays and discrepancies, offering a solid foundation for forensic CPM analysis.

Optimizing Project Controls: With high-resolution aerial images, our consultants can better anticipate potential issues and develop effective mitigation strategies. Regular drone surveys ensure continuous monitoring and alignment with project schedules.

Supporting Dispute Resolution: Drone imagery serves as compelling evidence in dispute resolution, providing clear, unbiased visual documentation of site conditions and project progress. This aids arbitrators, mediators, and other decision-makers in understanding the context of disputes.

Streamlining Claims Preparation: Our drone services enhance claim presentations by offering visual proof of project conditions, progress, and delays. This reduces redundancy, supports expert testimony, and ensures comprehensive documentation.

Improving Communication: High-quality drone footage facilitates transparent communication with stakeholders, allowing for detailed progress reports and updates. This visual documentation ensures all parties have a clear understanding of project status and any emerging issues.

3. ADVANCED TRAINING

- ◆ Confined Space Entry
- ◆ Working at Heights
- ◆ Working a Heights Rescue
- ◆ Elevated Work Platforms
- ◆ Remotely Piloted Aircraft System – Advanced Pilot Certificate
- ◆ Secret II Clearance – Government of Canada

4. ACHIEVEMENTS

Rapides Des Joachims – Minor Repairs, PSPC, Ottawa River (2021-2022)

Designed and project managed rehabilitation works on Ontario Abutment and Ontario Pier. 122-year heritage steel truss bridge, built on ashlar masonry piers set in the rapids.

Project Manager

Pont Noir, STO, Gatineau River (2022)

Forensic investigation of the early fatigue failure of a steel grating deck after less than 12 years of service. Determined root cause and made recommendations for rehabilitation.

Project Manager

Rapides Des Joachims – Comprehensive Detailed Inspection and Coatings Study,

PSPC, Ottawa River (2021-2022) (\$150k)

Completed inspection and prepared report for CDI and Coatings study.

Project Manager

MAIN ACHIEVEMENTS

Alexandra Bridge Boardwalk & Lane Articulations Project, PSPC, Ottawa River (2021-2022)

Was a member of the inspection team of the 2022 Special Inspection. Consulted on reviewed boardwalk replacement tender package.

Bridge Inspector / Engineer

South Channel Bridge Rocker Link Structural Health Monitoring Program, SIBC, Cornwall, ON, (2021-2022)

(\$50k) Planned and implemented a structural health monitoring program of critical end of life bridge components in collaboration with

Queen's University, COWI and Seaway International Bridge Corporation (SIBC) maintenance department. Active monitoring using vibrating wire strain gauges.

Project Manager & Technical Advisor

FBCL Bridge Inspection Program, Ottawa, ON, (2016-2022) (\$250k/year)

Procurement, award, management of Bridge Inspection Contracts across FBCL's \$6B of bridge assets.

- ◆ Review, approval, and submission to Transport Canada of all bridge inspection reports.
- ◆ Planning and budgeting of capital projects recommended through inspection program.

Manager, Engineering & Construction

FBCL Corporate Asset Management Program, ON, (2019-2022)

Based on the corporate objective of digitization of all assets and the application of analytics to best inform asset management planning, a working group led the roll out across the organization.

- ♦ Lead planner and subject matter expert on bridge asset management.

Engineering & Construction Lead – Asset Management Working Group

South Channel Bridge Maintenance Travellers Replacement, SIBC, Cornwall, ON, (2020-2022) (\$3.8M)

Project to replace the maintenance travelers and rails on which the travel, on an international suspension bridge 160ft over the St. Lawrence Seaway.

Project Manager & Technical Advisor

International Fibre Link, Feasibility Study & Detailed Design, FBCL, Thousand Islands Bridge, ON, (2021-2022) (\$150k)

To support bridge operations and future commercial opportunities, a fibre optic cable link with supporting infrastructure across the three Canadian bridge spans were required. Commencing with a feasibility study that rapidly advanced into a full design project. The design we developed would meet today's needs and needs of the future; in terms of security, tolling and future smart infrastructure. *Manager, Engineering & Construction*

Emergency Generators Replacement, FBCL, Sarnia, ON, (2021-2022) (\$5.5M)

Design and implementation of full replacement and modernization of the Blue Water Bridge emergency backup generators and supporting micro grid.

Manager, Engineering & Construction

Innovation Solutions Canada – Testing Stream - Avenue AI, Ottawa, ON, (2021-2022) (\$450k)

Provided facilities, coordination, and input for innovator Sandler Consultancy to install and test artificial intelligence software AvenueAI use to count axles and assess traffic volume via video analytics.

Technical Authority – Testing Department

Innovation Solutions Canada – Testing Stream – Total Pave, Ottawa, ON, (2021-2022) (\$550k)

Provided facilities, coordination, and input for innovator Total Pave to test drone-based data capture to support condition assessment and asset management planning of FBCL's paved asset inventory.

Technical Authority – Testing Department

Master Drainage Plan Update, FBCL, Sarnia, ON, (2021-2022) (\$100k)

Comprehensive review of site drainage requirements based future site usage under master plan, informed by increased rainfall levels forecasted in the site-specific climate model created under the Climate Risk Assessment. Provided recommendations and project definitions and scopes to meet bridge plaza drainage requirements to 2080 and mitigate regular flooding issues.

Manager, Engineering & Construction

Variable Message Signs Replacement, FBCL, Sarnia, ON, (2020-2021) (\$5M)

Design and implementation of full replacement and modernization of the Blue Water Bridge Variable Message Signs system used for traffic management on the bridges and bridge plaza.

Manager, Engineering & Construction

Old Administration Building Demolition and Plaza Paving BWB, Sarnia, ON, (2018-2021) (\$3M)

Demolition of Old Administration and CBSA commercial facilities at the core of the plaza of Canada's second busiest international bridge crossing as well as repaving of major portions of the site. Buildings being demolished were directly adjacent to active CBSA operations and had to be completed with major disruptions to traffic or operations.

Manager, Engineering & Construction

Blue Water Bridge Rehabilitation Program, Sarnia, ON, (2018-2020) (\$800k)

Design and planning of major rehabilitation of Blue Water Bridges. Program was developed to incorporate \$10M worth of major capital rehabilitation work into single bridge closures.

Manager, Engineering & Construction

2020 Blue Water Bridge Master Plan Update, FBCL, Sarnia, ON, (2020) (\$450M)

Scoping, procurement, award, and management of a consultant contract to update Master Plan for site development, facility regeneration. Also included a Commercial Master Plan component to maximize revenue sources on the plaza.

Project Manager

FCBL Climate Risk Assessment Study, FBCL, Ottawa, ON (2020) (\$150k)

A study including numerous workshops to capture the state of readiness and potential climate change impacts to infrastructure, personnel, and business processes as well as recommendations for adaptation.

Technical Advisor

SIBC Facilities Relocation Feasibility Study, SIBC, Cornwall, ON, (2018) (\$800k)

Project to study costs and planning around the relocation of SIBC tolling, administration and maintenance facilities based on return of land by Transport Canada to the Mohawks of Akwesasne.

Project Manager

LED Lighting Replacement Project, FBCL, Sarnia, ON, (2017-2018) (\$3M)

Feasibility study advancing to full design of the replacement of all lighting with LEDs. Payback period on each type of light based on energy savings was determined, and the work was prioritized such that lighting with best return on investment were done first.

Project Manager

Emergency Return Road, FBCL, Sarnia, ON, (2017-2018) (\$3M)

Design and implementation major civil work including demolition, archaeology, earthworks, roadworks, and IT controls systems.

Project Manager

Canadian Arch Painting Project, FBCL, Sault Ste Marie, ON (2017) (\$3.5M)

Supported the design and recoating of the Canadian arch of the International Bridge carried out by International Bridge Administration.

- ♦ Authored briefing note for Minister Marc Garneau on innovative coating product selected.

Technical Advisor / Owners Representative

Canadian Plaza Redevelopment, FBCL, Sault Ste Marie, ON (2014-2018) (\$51.6M)

Complete reconstruction of the Canadian bridge plaza in SSM. Demolition, site works, new CBSA, duty free and bridge maintenance facilities.

Project Manager

Bridge Security Requirements, FBCL, ON (2014-2016)

Security Plans for all international bridges and tunnels are required by Transport Canada.

- ♦ Developed first submissions of security plans for each crossing developed in partnership with local operating partners.
- ♦ Met with Security Inspectors for site visits, addressed and responded to comments and concerns.

- ♦ Helped develop internal procedures and documents to comply with Transport Canada requirements.

Bridge Security Lead

Ottawa Light Rail Transit – Tunnel Segment, Ottawa Light Rail Constructors, Ottawa, 2013 (\$2.1 B)

Tunnel excavation under the downtown core of Ottawa as the first phase of the construction Ottawa's light rail system.

- ♦ Authored Construction Impact Assessment Reports for the portal sites.
- ♦ Supervision and coordination of intermediate shaft site including shoring installation and blasting program.
- ♦ Delivery of blasting and vibration monitoring programs for West Portal and intermediate shaft.

Site Engineer

Lower Mattagami River Project, Kiewit, 2011-2013 (\$2.6B)

Major hydro redevelopment in partnership with the Moose Cree of northern Ontario. Reconstruction of Smoky Falls Dam, addition of new powerhouses to Little Long, Kipling and Harmon dams. Project added 438MW of capacity.

- ♦ Formwork fabrication field engineer – Coordination, procurement, production planning, logistics.
- ♦ Concrete placement field engineer - Inspection, supervision, coordination, technical support to construction teams.

Field Engineer

World Green Building Council, Bucharest, Romania, 2010

Summer internship placement through the WGBC at the Romania Green Building Council in Bucharest.

- ♦ LEED Assessment of Habitat for Humanity homes being constructed in partnership with the US Peace Corps.
- ♦ Provided training on the use of natural building materials.
- ♦ Supported the efforts of the RoGBC in greening of building stock in the city with the highest energy consumption per m² of a floorspace of any city in Europe.

Project Specialist

Queen's Athletics and Recreation Center, PCL, Kingston, ON, 2009 (\$200M)

Construction of an Athletics and Recreation Center at Queens University.

Jr Field Engineer

World University Service of Canada, Ancash, Peru, 2008

Part of a self-directed 1 year professional internship program focusing on humanitarian engineering and natural materials construction.

- ♦ Assisted with the survey, construction and planning of new drinking water and sewer systems at over 3000 m elevation in the Andes.

Engineer's Assistant

Thomas Engineering Inc., Manotick, Ontario, 2007

Blast analysis and surveying company that support the mining industry.

- ♦ Stockpile volume assessment via reflector less laser scanning.
- ♦ Blast optimization and instrumentation.

Jr. Engineer