SR160/Southworth Terminal—Terminal Building and Trestle Replacement Program—Packet A

Stantec Consulting Services Inc.
Washington State Department of Transportation
RFQ
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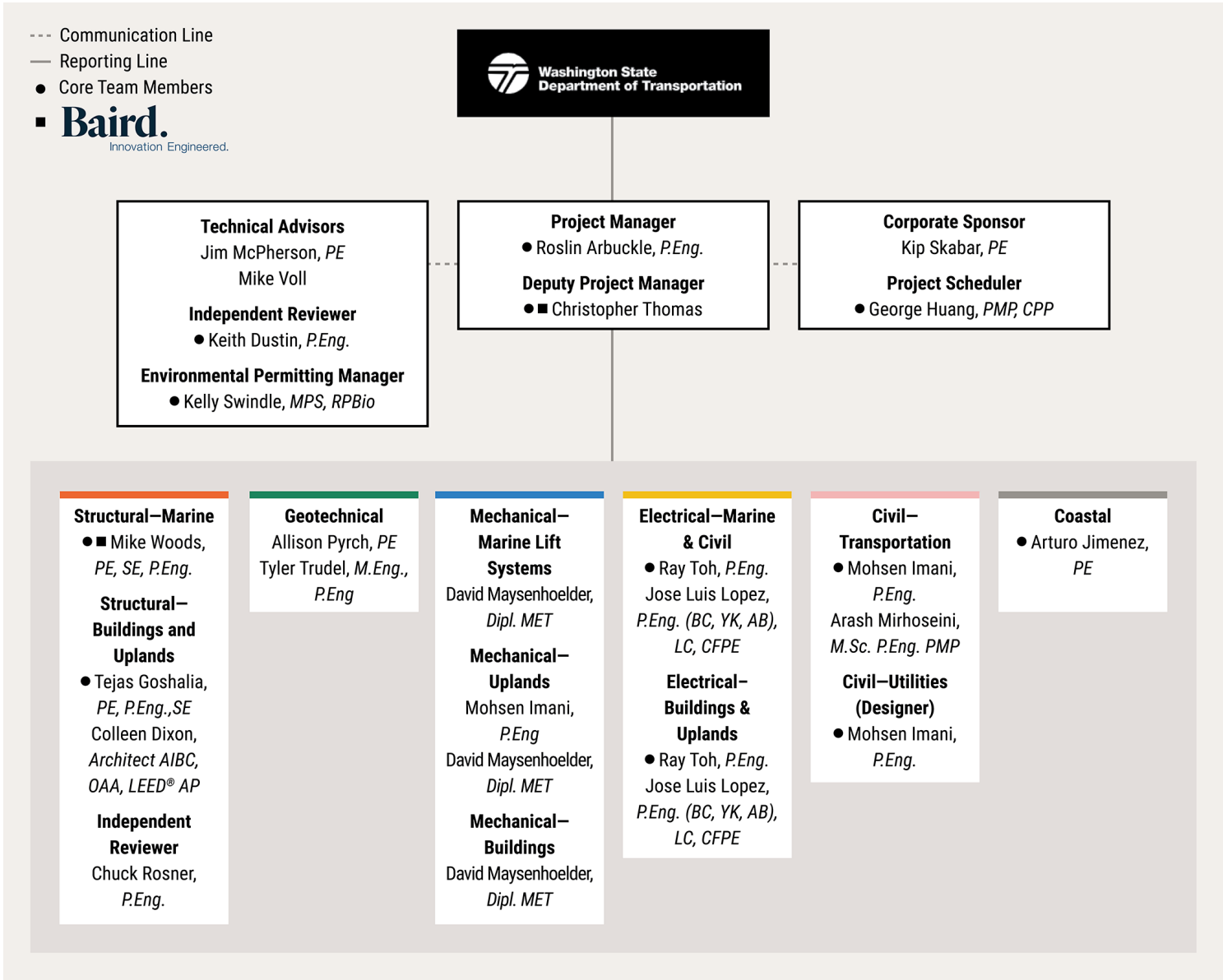
1. Qualifications/Expertise of Firms on Team

1.A Project Team Organizational Chart (Terminal Building & Trestle Replacement)

Figure 1 Project Team Organizational Chart



1.B Relevant Project Experience

Table 1 below demonstrates our expertise in undertaking similar scopes as proposed for this RFQ. The projects marked with an asterisk are project profiles on subsequent pages and provide a more detailed description of each project's scope, relevance and our team's involvement. Our proposed team have worked with each other before, providing Washington State Ferry with a cohesive unit.

Table 1 Project Matrix

Project	General Contract Administration	Project Controls & Scheduling	Quality Control and Quality Assurance	Pre-design studies preliminary design, final design, constructability reviews	Terminal building design and site plan	Building permit	Coastal engineering, berthing and mooring	Marine structure engineering	Geotechnical engineering	Vessel Electrification and Integrated Electrical Engineering	Environmental review and permitting	Construction cost estimates	Cost /Risk Assessment, Cost Estimate Validation Process or Value	Project delivery determination (DB or DBB or PDB / ECI)	Design Support During Construction	Owner Technical Advisory
Ferry Electrification OE Support* | Ontario Power Generation | Amherst Island, Loyalist, ON	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑
Shipyard Modernization & Outfitting Pier | Seaspan | North Vancouver, BC	☑	☑	☑	☑	☑	☑	☑	☑	☑	☐	☑	☑	☑	☑	☑	☑
Swartz Bay Terminal Development Plan* | BC Ferries | Victoria, BC	☐	☑	☑	☑	☑	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑
Swartz Bay West Zone Redevelopment* | BC Ferries | Victoria, BC	☐	☑	☑	☑	☑	☐	☐	☐	☑	☐	☑	☑	☑	☑	☐	☑
Roberts Bank Terminal 2 Owner's Engineer | Vancouver Fraser Port Authority | Delta, BC	☑	☑	☑	☑	☑	☑	☐	☐	☑	☑	☑	☑	☑	☑	☐	☐
Technical Advisory Services Agreement | DP World Canada | Various Locations, BC	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Ship Point Pier Assessment & Repair | Greater Victoria Harbour Authority | Victoria, BC	☑	☑	☑	☑	☐	☐	☑	☑	☑	☐	☐	☑	☑	☑	☑	☑
Ogden Point Inspection | Greater Victoria Harbour Authority | Victoria, BC	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☑
Fairview Phase 2 Container Terminal | DP World Canada | Prince Rupert, BC	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Barge-mounted Battery Energy Storage System (BESS) | Eastern Generation | New York, NY	☑	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑
Sound Transit Operations and Maintenance Facility East | Sound Transit | Bellevue, WA	☑	☑	☑	☐	☑	☑	☐	☐	☐	☐	☐	☑	☑	☐	☐	☐

Gabriola Island Ferry Terminal Planning Services

Location: Gabriola Island, British Columbia

Project Duration: October 2018 - February 2020

Client Name: British Columbia Ferry Services Inc.

Construction Value: N/A

Stantec Fees were $112,000

Stantec provided comprehensive consulting services to BC Ferries for its terminal at Descanso Bay on Gabriola Island, BC. Amendments to the text and maps of the Gabriola Official Community Plan and Land Use Bylaws are required to allow the long-term implementation of a new Terminal Development Plan for marine infrastructure and upland areas at the Descanso Bay, Gabriola Island Ferry Terminal.

The redevelopment includes the construction of a new berth, in the same general location, for the vessel (now served by the Quinsam) such as a new passenger waiting room, pick-up/drop-off area, more short-term parking, and better traffic flows.

Stantec's multi-disciplinary expertise was key for the supporting work necessary to navigate the Islands Trust planning process this included the biophysical inventory, the various civil engineering components, geotechnical, and development of an overall landscape concept. Our planners expeditiously managed the application, review, and approval process for the bylaw amendments. This included the public consultation and stakeholder component of the planning process.

Swartz Bay Terminal Redevelopment Project - Project Definition Phase

Location: Victoria, BC, Canada

Project Duration: September 2019 - January 2020

Client Name: British Columbia Ferry Services Inc.

Construction Value: N/A (Stantec Fees (Planning) $310,396)

BC Ferries provides year-round ferry services to the West Coast on 25 routes, supported by 36 vessels and 47 terminals. As one of the largest ferry operators in the world based, BC Ferries carries more than 22 million passengers and 8 million vehicles annually. In Spring 2018, BC Ferries embarked on preparing a Terminal Development Plan (TDP) with Stantec which provided an analysis of the present and future requirements.

The TDP sets out the long-term vision of the terminal, guiding future change and development in a sustainable and phased approach. It provides the framework for the implementation of strategies, actions, and projects

At Swartz Bay, the objective was an optimal plan that addresses a wide range of issues related to increasing terminal capacity: warehouse relocation & expansion, revanmped foot passenger facilities, replace vehicle passenger facilities, more compound and parking lot capacities, commercial trucking services, consolidation of administration, site safety & security, site services & amenities, marine upgrades, and design & implementation.

West Zone Redevelopment (Project Definition Phase)

Building on recommendations from the TDP, the West Zone Redevelopment (Project Definition Phase) was the next step for our Swartz Bay development work. BC Ferries selected the following four components of the TDP to initiate the redevelopment: the combined warehouse/administration building, the roundabout and west exit road, the replacement for employee parking, and the passenger terminal forecourt. The primary purpose of Project Definition was to provide a firm foundation for the project design phase which commenced in January 2020. Stantec was also retained to prepare the final concept design repor

Lake Ontario Electric Ferry Service

Location: Amherst Island, Wolfe Island, and Kingston, ON

Project Duration: May 2018 – In progress

Client Name: Ontario Power Generation

Construction Value: $62M

With the existing ferries already over capacity and the local population growing, Ontario's Ministry of Transportation (MTO) recognized that a more reliable and efficient solution was needed. MTO set about upgrading the ferry terminal infrastructure in four locations – Kingston, Millhaven, Amherst Island, and Wolfe Island – to meet the needs of an expanded ferry service as well as modernizing the passenger experience.

MTO turned to Stantec to develop the preliminary designs and environmental assessments for the Kingston to Wolfe Island ferry route docks.

Our team served as the Owner's Engineer under an EPCM contract for the Wolfe Island ferry service, providing oversight on the integration of all vendor packages. We provided overall project management, transportation planning and design, traffic engineering, environmental services, drainage, water/sewer, electrical and mechanical engineering for the buildings, servicing infrastructure, marine structural design, landscape architecture, LEED and commissioning services.

Once complete, the ferry system will be the province's first hybrid electric passenger and vehicle ferry network, and one of the first in Canada. The anticipated ridership is 1.2 million passengers and 600,000 vehicles annually.

2. Qualifications of Proposed Project Manager

2.A Project Manager Experience Overview Managing Similar Public Building and Marine Structure Projects

New Major Vessel Infrastructure Support

Location: British-Columbia (Various Terminals)

Project Duration: 2022-Ongoing

Client/Organization: British Columbia Ferry Services Inc.

Construction Value: N/A

Stantec Fees: $1.5 million CAD

British Columbia Ferry Services (BCFS) has 25 routes throughout the west coast of BC, with 39 ferries moving more than 22 million passengers and 8 million vehicles every year. As BCFS looks to bring on new vessels for their major routes to support their zero emissions targets, Stantec is working with BCFS to provide engineering, planning and estimating services for the required infrastructure.

Stantec's initial scope included developing a concept design and cost estimates for six terminals and studying options to support the electrification of the new major vessels. Options were evaluated, exploring whether a Battery Energy Storage System (BESS) could benefit British Columbia Ferry Services as well as an option to bring new transmission lines to the terminals to provide the very high ferry charging demand. The result of this analysis was to advance transmission infrastructure improvements to service vessel charging at terminals due to technical challenges and implementation costs of the BESS. Stantec developed a 30% design for the transmission option at 6 terminals. Class 3 capital cost estimates, project implementation schedules and a review of regulatory processes were also conducted

For the marine infrastructure, Stantec has completed various call-ups. These include:

- A berthing and mooring analysis of the existing infrastructure for the new major vessels loads
- Prop scour study to review the impact of the new vessels on the existing seabed and piled infrastructure
- Concept and feasibility designs and cost estimates for the pile and deck platform to support the large-scale charging infrastructure.
- Design and cost estimates for a new auto mooring system at three terminals including the required infrastructure and modifications to the existing infrastructure

Project Schedule: Stantec has supported BCFS through an "As & When" contract since 2022. As part of this work, we have been working to meet and support BCFS, through their business case and approval stages, often working to tight timelines to provide the information requested. **Resource Issues:** As the scope of the work conducted to support BCFS for this project has ranged significantly, we have relied on both local experience combined with the larger Stantec team to allocate the best resources and experience for each task order.

Risk Management: As part of Stantec's project deliverables, a risk matrix for project implementation was developed along with proposed mitigation measures.

Swartz Bay Redevelopment Project – Project Definition Phase

Location: Victoria, British-Columbia

Project Duration: Completed 2020

Client/Organization: British-Columbia Ferry Services Inc.

Construction Value: N/A

Stantec Fees: $325,000 CAD

In Spring 2018, British-Columbia Ferry Services (BCFS) embarked on preparing a Terminal Development Plan (TDP) with Stantec, providing an analysis of the present and future requirements plus the consequent developments for the terminal for service over the next 25 years.

Key drivers in this plan were:

- improved passenger service and operational efficiency.
- anticipated passenger growth.
- life expectancy of the existing buildings and services.
- limited ability to expand the site.
- varied topography of the site; and,
- opportunities provided by emerging technologies.

As part of this Project Definition phase, BCFS has selected four components to initiate the redevelopment: the combined warehouse / administration building, the roundabout and west exit road, the replacement for employee parking, and the passenger terminal forecourt. The primary purpose of the Project Definition is to provide a firm foundation for the project design phase which will commence in January 2020. Stantec was retained by BCFS for this phase and was responsible for:

- Providing a more detailed and current assessment of the site including a geotechnical review, a new survey and topographic, an environmental impact study and a condition report and replacement plan for existing site services.
- Meeting with stakeholders to revisit and further develop the Facilities Program from the TDP, as well as the broader requirements of the terminal which will be formalized in the Owner's Project Requirements.
- Developing integrated designs for the four project components including full schematic plans as well as a schedule for design, approvals and construction; and,
- Preparing the final Concept Design Report.

Project Schedule: As the terminal must remain fully operational throughout construction, the phasing of the various components of the plan was a critical element of that study. We utilized and in-house team that has worked together on many port projects, to efficiently and effectively deliver the project on schedule. The final few months of the project we delivered at the beginning of the Covid-19 pandemic; however, we switched over to remote working both internally and for coordination with the client resulting in a minimal impact to our schedule.

Resource Issues: To deliver this project, wee utilized and in-house team that has worked together on many port projects. In addition, we were able to work with our local office, for additional field services, environmental and archaeology reviews. This combined approach allowed us to efficiently and effectively deliver the project.

Risk Management: A multiple accounts evaluation was conducted to review the

Kingstown Port Modernization Project

Location: St. Vincent and the Grenadines

Project Duration: Bid Phase:2020-2021, Project Execution: May 2022-April 2025.

Client/Organization: Government of St. Vincent and the Grenadines (End Client), Aecon (Contractor)

Construction Value: $200 million USD

The Kingstown Port Modernization Project is a new greenfield container and break-bulk terminal in the Port of Kingstown to serve as the island nation's primary cargo port. Stantec is currently the Lead Designer to the Design-Build Contractor. During the bid phase Stantec prepared 100 drawings, 30% complete design in 8 weeks. To achieve this very tight timeline, Stantec engaged 6 offices in 4 countries to design every aspect of the project in-house, including an offshore outfall, geotechnical engineering and ground improvement, 380 m wharf, all terminal civil works, all terminal electrical and security designs, and four terminal buildings including administration and operations, breakbulk warehouse, maintenance and warehousing.

proposed alternatives. Risk for each alternative was reviewed by the project working group and included in the evaluation.

The project is being executed under the FIDIC Yellow Book Conditions of Contract. Following award of the project Stantec developed the design package to IFC level and are providing construction support services throughout the construction.

Project Schedule: As with most design build projects, the design schedule was on the critical path. In the bid phase, early works packages were identified to manage design while allowing early stages of the construction to commence. Regular meetings with the design team, contractor, and owners engineer through the design process allowed for decisions to be made in a timely manner.

Resource Issues: To deliver this project, a Stantec engaged 6 offices in 3 countries to design all aspects of the project in-house. Our combined designer/builder team utilized a cloud-based BIM system to manage and effectively deliver the design across various regions.

Risk Management: A risk register has been managed between the design and contractor team throughout the project. This has allowed for clear and logical approach to managing risk throughout the project stages.

2.B Project Manager Experience Overview Managing WSDOT/WSF Projects

The projects listed above showcase Roslin's experience in managing projects at both federal/national and provincial levels. She brings valuable knowledge and insights from regulatory agencies, various stakeholders, and other transportation agencies to the Washington State Department of Transportation.

3. Key GEC Team Members Qualifications (Prime Consultant and Sub-Consultants)/ 3.A Core Team

3.A.1 Project Manager

Roslin Arbuckle

P.Eng

Project Manager

Stantec

17 years of experience

Education

Queen's University
Bachelor of Science, Civil Engineering
Kingston, Ontario, 2007

Association of Professional Engineers and Geoscientists of British Columbia/ Professional Engineer #41702

Bio – Roslin is a project manager and port planner with more than 17 years of experience working directly on port projects. She excels in seeing the larger picture and bringing together teams to efficiently and effectively deliver a project. Roslin has managed several large-scale interdisciplinary port projects as well as lead the planning on many cargo, cruise and ferry terminals.

Roslin has lead planning projects for DPW Fraser Surrey Laurentia container terminal in Quebec City and Duke Point container terminal in British Columbia, SKIT terminal in Prince Rupert as well as the Honolulu Harbor Master Plan. Roslin is the project manager for the engineering design and construction services for the design build delivery of a new greenfield container and breakbulk cargo terminal in Saint Vincent in the Grenadines.

Responsibilities – Roslin will be responsible for the management of the design team and a direct line of communication with WSDOT.

Relevant Projects:

New Major Vessels Infrastructure Support | British Columbia | Project Manager | 2022-Ongoing

Roslin is leading an interdisciplinary team to provide design support for the infrastructure required to support the planned New Major Vessels for BC Ferries. To date, this has included a review and development of concept plans and cost estimating for the electrification of ferries including possible transmission or distribution options as well as battery storage.

Kingstown Modernization Project | Saint Vincent and the Grenadines | Project Manager | 2020-Ongoing

Roslin is leading an interdisciplinary team to provide the design and construction support for a design build project of a new $200 million USD greenfield multi-use cargo terminal in Saint Vincent and the Grenadines. Scope includes land reclamation, bulkhead wharf, sewer outfall, roadworks updates, drainage and utilities and 4 new buildings on the terminal.

Swartz Bay Terminal Redevelopment Project - Project Definition Phase | Project Manager | September 2019 – January 2020

Roslin is leading this project, responsible for providing a more detailed and current assessment of the site and further develop the Facilities Program from the TDP, as well as the broader requirements of the terminal which will be formalized in the Owner's Project Requirements; developing integrated designs for the four project components including full schematic plans, approvals and construction; and preparing the final Concept Design Report.

3.A.2 Deputy Project Manager

Christopher Thomas

Deputy Project Manager

Baird

18 years of experience

Education
M.Sc. | Coastal Engineering
B.Sc. | Marine Geography

Certifications
PIANC MarCom Rep (USA) / Engineers & Geoscientists BC/ Institute of Civil Engineers

Bio – Chris is based in Gig Harbor, WA, and is a user of the Southworth Ferry Terminal. He is part of the community that will benefit from these improvements and upgrades and is excited by the opportunity of taking part in the project. Chris. is an engineering professional with over 18 years of experience leading and delivering projects in the marine & coastal engineering industry. He has managed many marine terminal and port projects and has experience working in the Pacific Northwest. In addition to his management experience, his technical expertise includes marine facility siting and terminal planning, marine operational safety and layout planning, mooring analysis and ship-to-shore interface, channel and turning basin design, dredging and reclamation design, metocean and sediment transport modelling, coastal morphology, and estimation.

Responsibilities – Chris will work as the Deputy Project Manager and will be responsible for integrating the coastal and structural engineering works performed by Baird into the Stantec team, and responsible for local liaison with the WSDOT project team and site.

Relevant Projects:

Dry Dock Repair | Bremerton, WA | NAVFAC | 2023

Chris was a lead member of the contractor led team that was tasked with an initial assessment of conditions of dry docks at PNSN & NSBB. The team undertook site inspections, reviewed information and determined corrective course of action for required repairs. The project scope of work included detailed engineering analysis and construction planning and was aggressively scheduled to ensure that strict projects milestones were met.

Fairview Container Terminal Expansion | Kiewit | Prince Rupert, BC | 2021-2022

Chris was Project Manager for marine and coastal detailed design engineering and construction support for the extension of an existing container terminal in Prince Rupert. Responsibilities included all marine and coastal engineering scope related to the revetment design and reclamation of the terminal extension, and the design of habitat creation areas, which utilized dredged material for beneficial use by containing it within rock structures to provide new beach areas.

Pacific Canada Terminal | Vopak | Prince Rupert, BC | 2020-2021

Chris was deputy Project Manager for all marine technical work undertaken to support the FEED stage of a new bulk liquids terminals near Prince Rupert, BC. Work included leading the design of a multi-buoy mooring system for bulk liquid vessels which would be used in conjunction with a combined hose and hard arm loading system from a jetty. Other responsibilities included leading the metocean analysis, ship-to-shore interface design, aids to navigation requirements, navigation simulation requirements and construction planning and estimation.

3.A.3 Civil Designer

Mohsen Imani

P.Eng.

Civil Designer, Transportation & Utilities

Stantec

40 years of experience

Education
Bachelor of Science in Civil Engineering, University of Portland, Portland, Oregon, 1981

Professional Engineer #32843, Engineers and Geoscientists British Columbia

Bio – Mohsen is a senior civil engineer with more than 30 years of Canadian and international experience in EPC and EPCM projects, particularly in infrastructure designs, construction reviews with particular emphasis on Education buildings, Industrial Buildings, ports and marines, oil and gas, hydroelectric, transportation, and mining projects. Mohsen has supervised and coordinated the design activities of a multi-disciplinary group undertaking studies from reconnaissance to feasibility, and prepared design and construction documents from conceptual stages, to engineering detailed design, and to completion of constructed projects.

Responsibilities – Mohsen will be responsible for all upland civil utilities, pavement, grading and drainage design work. He brings extensive civil engineering experience for a wide range of marine terminals across North America and the Caribbean.

Relevant Projects:

BC Ferries Swartz Bay, Redevelopment Concept Design | Lead Civil Engineer | September 2019 – January 2020

Responsible for conceptual design of new exit access road and roundabout due to the new administrative and warehouse buildings which made the existing routing unsuitable for traffic flow. Design of new employee parking lot to accommodate the anticipated increase in traffic volumes over the next 25 years. Design and upgrade the existing Forecourt which includes the new access ramp, separate lanes for buses, taxis, drop-off/ pickups, and short-term parking lot. A dedicated cut & cover tunnel beneath the Forecourt for service vehicles between the Wearhouse and berth. Prepared class C cost estimate.

Prince Rupert Terminal Expansion Project | Lead Civil Engineer | 2023-2024

Responsible for the detailed design of all Civil work related to expansion of container yard, Intermodal yard and wharf which includes, grading, pavement and utilities including the design of 8,200 m sub-drain system for rail track, relocation and design of 1,700 meter of 150 mm diameter domestic water line, design of 1,200 meter 250 mm diameter fire water line and 800 m of sanitary line and related structures such as waste water treatment plant and lift stations.

Beauport Container Terminal | Laurentia | Lead Civil Engineer | 2017-2018

Responsible for detail design of all Civil work related to expansion of container yard, Intermodal yard and wharf which includes, grading, pavement and utilities which includes design of 8,200 m sub-drain system for rail track, relocation and design of 1,700 meter of 150 mm diameter domestic water line, design of 1,200 meter 250 mm diameter fire water line and 800 m of sanitary line and related structures such as waste water treatment plant and lift stations.

3.A.4 Building Structure Designer

Tejas Goshalia

PE, P.Eng.,SE

Building Structure Designer

Stantec

32 years of experience

Education
Master of Science, Structural Engineering, University of California, Berkeley, Berkeley, California, 1992
Bachelor of Science, Civil Engineering, Birla Vishwakarma Mahavidyalaya, Gujarat, India, 1991

Certifications
Structural Engineer #S-5004, California Board for Professional Engineers, Land Surveyors, and Geologists

Bio – Tejas offers efficiently tailored structural engineering systems for new facility designs, industrial upgrades and seismic retrofits. He brings over 21 years of diverse experience as a lead engineer and project manager for designing vehicle maintenance industrial facilities, heavy-crane engineering, long-span structures, transit stations, airports, civic, and institutional projects in Canada, the United States, the Bahamas and India.

Tejas has a proven track record in the P3 environment – acting in an advisory role as client's Compliance Representative and on Proponent's side as an engineer offering optimal designs within budget and on schedule. He employs clear thinking with sound coordination, guided by attention to constructability and process operations.

His work brings together the delicate balance between new technologies and cost-efficient sustainable solutions, skillfully applied to address the many unique challenges on projects requiring new facilities, expansions, upgrade or retrofits. His design for the Seismic Retrofit of the Police Administration Building in San Jose, California received the 2003 Merit Award from the Structural Engineering Association of California (SEAOC).

Tejas presents optimal designs that are within budget and on schedule. He employs clear thinking with sound coordination, guided by attention to constructability and process operations. His work displays cutting-edge solutions successfully applied in challenging high seismic zones, hurricane environments and cold regions.

Responsibilities – Tejas brings considerable structural engineering design expertise to the team and will be responsible for building structural design elements on the project.

Relevant Projects:

Kingstown Port Modernization Project | Structural Engineer of Record for all landside Buildings, Power Substation and Fare Gates | March 2021 – ongoing

Fraser Surrey Terminal Truck Gate | Structural Engineer of Record for all Landside Buildings | January 2024 – ongoing

Robert Banks Terminal II | Structural Engineering Independent Reviewer for all landside buildings and infrastructure foundation elements | August 2020 – ongoing

3.A.5 Marine Structure Designer

Mike Woods

WA PE. PE & SE in CA.

Marine Structure Designer

Baird

26 years of experience (24 in waterfront structures)

Education
M.Eng. | Civil Engineering | MIT
S.B. | Civil Engineering | MIT

Certifications
Structural Engineer: CA, MA/ Professional Engineer: CA, LA, ME, NJ, WA, BC. LEED AP, WEDG

Bio – Mike Woods has experience in project management, structural design, and construction engineering. Working from the U.S. and overseas, he has led teams and participated in the design of storm surge barriers, flood walls, floodgates, waterfront and offshore structures, immersed tube tunnels, float-in prefabricated concrete shells, cofferdams, seawalls, bulkheads, and ferry terminals.

Responsibilities – Baird's lead marine structure engineer who will be responsible for the trestle structural design elements.

Relevant Projects:

Caven Pt. Marine Terminal Hybrid Vessel Shore Power | USACE New York | Jersey City, NJ | 2023-present

Lead Structural Engineer for the design of wharf upgrade for new 148-foot hybrid electric catamaran debris collection vessel including upgrade and replacement of the fender system, mooring bollards, mooring line layout. (Baird also performed the dynamic mooring analysis and coordinated the electrical and cable crane work.) Est. Cost: $5+ M.

Eareckson Air Station Fuel Pier Retrofit | USACE POA District | Shemya Island, Alaska | 2023

Lead Structural Engineer for independent peer review of Stantec's nonlinear soil-structure interaction (SSI) seismic analysis of retrofitted & enlarged 340'x100' fuel pier subject to mag. 7.9, 1.1g earthquakes & tsunamis.

Iron Ore Export Marine Terminal | Confidential Client | Africa | 2020

Lead Structural Engineer. Export wharf with shiploaders, approach jetty, causeway, transfer platform, tug harbor, pioneering marine offloading facility (PMOF), temporary fuel berth, rail car dumper, and stockpiles with stackers and reclaimers, steel pipe piles with rock anchors / sockets. Site selection assistance. Designed a variant with three 105' x 108' tall x 615' gravity base structure (GBS) caissons to store and load iron ore, constructed in existing drydocks.

Alameda Seaplane Lagoon Ferry Landing | City of Alameda | Alameda, CA | 2018-2019

Lead Structural Engineer. 308-ft. marine terminal for 150' x 40' x 6' draft x 265-long-ton vessels. Dredged depth -16'. 135-foot x 42-foot steel, landing float, guide- and donut-fender-piles. Deck plan, ramp / platform layout. Pile-supported, reinforced concrete pier and landside concrete ramps, stairs, seismic joints. Knee fenders, mooring bitts, spring line lugs for ten vessels. Approx. Constr. Cost: $18 million.

3.A.6 Electrical Designer

Ray Toh

P.Eng., LEED® AP

Electrical Designer

Stantec

42 years of experience

University of Ottawa, Bachelor of Science, Electrical Engineering - Cum Laude, Ottawa, Ontario, 1982

Electrical Engineer: BC (Canada), Ontario (Canada)
Professional Engineer: BC, AB, SK, MA, ON.

Bio – Ray has more than 42 years of experience in electrical engineering and construction for various types of industrial facilities, transportation facilities, port & marine facilities and commercial buildings.

Responsibilities – As Lead Electrical Engineer, Ray will be responsible for managing the electrical design team, ensuring compliance with project requirements include pre-design site verification & data gathering, development of concept design, design development and preparation of construction documents and preparation of QA/QC activities. Other responsibilities include, but are not limited to, leading the design of power distribution, lighting design, power metering & monitoring, power quality audit, building IT distribution network (conduits, cables and plant), the complete telecommunications, CCTV system, Intrusion Alarm system conduits, fire alarm and coordinating the electrical design team to delivery all other related security or electrical system requirements. Ray will also provide construction phase services for electrical installations.

Relevant Projects:

25kV Power Distribution and Shore Power Upgrade for Langdale Terminal | Sunshine Coast, BC | Senior Electrical Engineer | 2010

Ray provided detailed engineering design and construction for the project. The main electrical service installation for Langdale Ferry Terminal had reached its useful life cycle and had very limited capacity to provide shore power for larger vessels. Rising fuel costs and neighborhood complaints about the noise pollution also drove BC Ferry to consider upgrading the electrical service infrastructure installations at the terminal.

Fairview Container Terminal, Phase 2 Expansion | Prince Rupert, BC | Lead Electrical Engineer | 2012

Ray provided conceptual design and outline specifications, for electrical systems for all terminal support buildings and facilities, including administration building, maintenance and repair building, driver service building, Longshore break room building, VACIS facility, POV parking facility, fueling facilities, substations, duct bank infrastructure, roadway lighting, and more. The electrical systems include lighting, power distribution, motor controls, PA system, telecommunication, and security and access control systems.

Replace B-Jetty | CFB Esquimalt | Victoria, BC | Senior Electrical Engineer | 2024

Ray provided electrical engineering design for a new jetty to replace the existing, aging jetty. The new jetty is designed to accommodate new ships and submarines when berthed at the jetty. The project is divided into 2 work packages namely “On Shore Construction” and “Jetty Construction”. The engineering design included infrastructure work for site services, service tunnel, shore power, DC power for submarine, jetty crane, high mast lighting, substation, roadway lighting, ancillary buildings, wastewater treatment plant, and more.

3.A.8 Environmental Permitting Manager

Kelly Swindle

MPS, RPBio

Environmental Permitting Manager

Stantec

18 years of experience

Bachelor of Science, *Marine Science*, Auburn University Montgomery, Alabama, United States, 2004

Master of Professional Studies, *Ecosystem Management and Administration*, Penn State World Campus, Pennsylvania, United States, 2024

State Environmental Policy Act, Washington Department of Ecology, Bellevue, Washington, United States, 2023

Registered Professional Biologist (RPBio), College of Applied Biologists, BC, Canada, 2024

Bio – Kelly has more than 18 years' experience in the marine environmental restoration and conservation field. Post-Deepwater Horizon Oil Spill, she led the Alabama Natural Resource Damage Assessment Trustee Implementation Group (NRDA, TIG) through the development of two Environmental Assessments, coordinated environmental compliance activities, and managed 30 projects on behalf of the State of Alabama. Kelly's environmental permitting experience includes National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), Endangered Species Act (ESA), Marine Mammal Protection Act (MMPA), and state and local compliance. Prior to the Consent Decree, she served as the State subject matter expert for the NRDA Marine Mammal and Sea Turtle Technical Working Groups. Kelly also has many years of grant administration experience, including as program coordinator for the Coastal Impact Assistance Program and then for the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States (RESTORE) Act Council-Selected Restoration Component program for Alabama. She is experienced in technical writing, environmental compliance, grant development, project oversight, interagency coordination, and public outreach.

Responsibilities - Kelly will lead a team of local permitting experts to coordinate with WSDOT and project engineers to determine permit needs and timing. Permitting coordination will begin early to advise the team of NEPA requirements as well as SEPA, Clean Water Act, and other required local, state, and federal permit application timing.

Relevant Projects:

Naval Base Kitsap-Bremerton P-859 Electrical Substation Upgrades | 2023 – Present

Kelly is the environmental permitting lead for the P-859 Electrical Substation Upgrades project. The permitting team is responsible for identifying permit needs for the demolition and re-construction of electrical substations on and near Pier D. Most of the project area is located on a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site, so hazardous conditions must be accounted for in permitting considerations. The permitting team will be supplying the Navy with Environmental Protection Agency National Pollutant Discharge Elimination System (NPDES), Puget Sound Clean Air Agency air quality, and any other identified permit applications according to the construction timeline.

Pictured Rocks National Lakeshore (PIRO) Miners Falls Staircase Replacement NEPA Environmental Assessment | 2023 – Present | NEPA Specialist

Kelly is one of two National Environmental Policy Act (NEPA) Specialists assisting National Park Service (NPS) staff with an Environmental Assessment (EA) for the Pictured Rocks National Lakeshore (PIRO) Miners Falls Staircase Replacement. She drafted the biological components of the Affected Environment and Environmental Consequences, Mitigation Measures, public comment analysis and compilation, and preparation of the Finding of No Significant Impact (FONSI).

PSNS Multi-Mission Dry Dock (P-454) | 2022-Present

As the Environmental Permitting Co-Lead, Kelly will coordinate with the permitting team to develop an environmental permitting plan to guide the client and A&E team on permit requirements and scheduling throughout the project. The permitting team will also support the client in preparing and submitting permit applications. Permits to be prepared include Clean Water Act Sections 401, 402, and 404, Clean Air Act, Endangered Species Act, Marine Mammal Protection Act, Joint Aquatic Resources Permit (JARPA), etc. Environmental tasks associated with permitting support include intergovernmental coordination with State and Federal Agencies, planning for environmental mitigation, regulatory permit compliance, EIS technical support, feasibility to discharge process water directly into Sinclair Inlet, and potential archaeological/cultural resource identification.

3.A.9 Project Scheduler

George Huang

PMP, CPP, M.Eng.

Project Scheduler

Stantec

26 years of experience

Master's degree in Engineering Management, Ottawa, Ontario, Canada, 2006
Bachelor's Degree in Electrical & Electronics Civil Aviation, Electrical & Electronics Civil Aviation, Tianjin, China, 1995

Project Management Professional Certificate, Montreal, QC, Canada, 2006/
Certified Professional Purchaser, Vancouver, BC, Canada, 2009/

Bio – George has more than 26 years in project planning/scheduling/program control/estimating experience through the entire project management lifecycle at construction, transit, shipbuilding as well as aviation industries. He is leading planning teams in developing resource loading integrated master schedules and implementing earned value & risk management for multi-billion-dollar projects. He provides a broad range of services, expertise to investigate, analyze and integrate data from multiple sources, establish master project schedule and oversee/control progress by using professional scheduling/reporting tools e.g. Primavera P6, MS Project and MS Visio.

Responsibilities – George will work closely with project managers, architects, engineers, and other stakeholders to develop a comprehensive integrated master schedule baseline in planning & scheduling software Primavera 6 version 19 or later. He will breakdown the project scope, objectives, and requirements to a detailed manageable level of schedule that outline the start and finish dates for surveys /geotechnical & environmental assessments, design, procurement, permitting, construction and test/commissioning. He will analyse resource availability, project constraints, and deadlines to allocate resources including labour, equipment, and materials efficiently across different project tasks to ensure that work progresses under budget and on schedule. Throughout the project design and construction phases, he will monitor the progress of activities against the baseline schedule and will update the schedule regularly to reflect any changes, delays, or unexpected issues that may arise. George will implement critical path analysis, earned value management, cashflow forecast, lookahead schedule and other planning tools needed to ensure that all stakeholders are aware of the status and any adjustments that may be necessary to the project.

Relevant Projects:

Oshawa to Bowmanville Rail Service Expansion | 2022 – Present

George is the Lead Scheduler for Rail Service Expansion project from Oshawa to Bowmanville, which proposes one new track plus sidings and passing tracks where necessary through Oshawa GO station to cross Highway 401, making an eventual connection through CP's Belleville Subdivision to Bowmanville. George worked collaboratively with multi-disciplinary team of Engineers, Surveyors, Biologists and other related professionals to provide integrated consulting services to clients. George oversaw the work of contractors and consultants; provided work direction and monitors contract compliance to ensure service standards, budgets and project deliverables are adhered to.]

Elkview Operations Harmer Facilities Relocation | 2022 – 2024

George was the Senior Scheduler Planner for the project. George developed and managed the resource loading master program schedule for a project. He worked with Stantec's Design Team to develop the framework for the program schedule, then developed a Level 4 detailed schedule including planning, detailed design, contract procurement, construction, and handover. His responsibilities included identifying key project milestones, critical paths, and a schedule baseline; managing bi-weekly and monthly schedule updates; performing schedule variance analysis including an analysis of project critical path and impacts to key milestone dates; and running what-if scenarios as requested by the client. George incorporated client comments and additional scope changes into the master schedule and communicated the impact to the project end date.

Hurontario light rail transit (LRT) | 2022 - Present

The 18-km Hazel McCallion Line will feature 19 stops, travel through 2 urban growth centres and connect to major transit systems. As the Schedule Lead for construction contractor's monthly review, George provided Technical Advisory and Contracting Authority (Metrolinx) team with effective management of the project's schedule, cost, and quality. He led an across functional management team to review design consultant’s and construction contractor’s monthly status reports and Micro Works Schedule, assess the progress of the contracts against the approved project baseline, and provided advice and comments for improvement. George worked with project team to identify and fix the schedule logic gaps and internal/external interdependency logic, and key inputs to the schedule. He investigated the critical path, WBS and the fully cost-loaded project schedule, monthly cash flow and earned value reports to produce a summary/narrative of the master schedule and composed a performance dashboard report monthly.

3.A.10 Coastal Engineer

Arturo Jimenez

PE

Coastal Engineer

Stantec

13 years of experience

B.S., Civil Engineering, Jackson State University
Jackson, Mississippi, United States, 2009
M.S., Ocean Engineering, Texas A&M University
College Station, Texas, United States, 2011

State of Texas Professional Engineer #119163

Bio – Arturo has over 12 years of experience in coastal engineering consulting. His experience includes meteorological and oceanographic (metocean) data analysis, shoreline protection design, calculation of wave forces on vertical walls and jetties, vessel berthing and mooring studies, navigation studies, storm surge studies, dredging plans and specifications, GIS, and programming. Arturo has taken the role of coastal lead on several projects, providing direction to the coastal team, and coordinating with the mooring and structural engineering teams to achieve consistency across project components. His coastal engineering consulting also includes extensive experience with the MIKE 21 suite of models to perform numerical modeling of coastal areas - including MIKE 21 hydrodynamic (2D and 3D) modeling, wave modeling, tropical cyclone modeling, sediment transport modeling, and tsunami modeling

Responsibilities – Arturo will be responsible for coastal engineering, wave studies, shoreline protection / revetment design, berthing/mooring analyses, dredging plans, and climate adaptation measures on the project.

Relevant Projects:

Kingsbay Naval Submarine Base Wave Modeling * | Camden County, GA, USA | Coastal Engineer

Arturo was responsible for the development of a regional MIKE 21 Spectral Waves model to determine the design wave conditions for a range of extreme wind speeds within Cumberland Sound for the design of wave screens to maintain navigable conditions in a small craft harbor, using criteria established in Unified Facilities Criteria (UFC) 4-152-07 Design: Small Craft Berthing Facilities

Kingstown Port Modernization Works | St. Vincent and the Grenadines | Coastal Engineer

Responsible for designing the submerged armor stone revetments to be constructed along the perimeter of a new quay wall to prevent scour at the toe due to extreme waves associated with tropical storms and propeller velocities associated maneuvering of container vessels and tugs in the vicinity of the quay wall.

Storm Surge Studies * | Coastal Engineer

Responisble for conducting storm surge studies for liquid natural gas terminals in Texas and Louisiana exposed to storms in the Gulf of Mexico. Tasks included: Gathering regional and site-specific water level data reflecting storm events, Analyzing water level data for seasonal fluctuations, Analyzing FEMA flood maps and high-water marks, Analyzing local topography and features, Using available storm data to estimate various return periods, Estimating relative sea level rise contributions during design life, and Preparing a report summarizing the storm surge elevations and recommended site elevations for design.

3.A.11 Independent Reviewer

Keith Dustin

P.Eng.

Independent Reviewer

Stantec

37 years of experience

Bachelor of Applied Science, University of Ottawa

Professional Engineers of Ontario (PEO)
Professional Engineers & Geoscientists of Alberta (APEGA)

Bio – Keith Dustin is a Senior Project Manager, and Vice President of Transportation. Keith has over 37 years of experience in detail design, preliminary design, environmental assessments, active transportation, ferry facilities, shoreline protection, transit (BRT and LRT), value engineering/risk assessment, and contract administration across Canada on both conventional delivery and alternative delivery projects. Large ferry projects typically involve many different disciplines including transportation, structural (civil, building, and marine), electrical, mechanical, architectural, environmental, site servicing, utilities, coastal, landscape architecture, geotechnical (foundations and pavements), and storm water management resulting in the need for complex coordination and collaboration. These types of facilities also typically become hubs for many modes of transportation including pedestrians, cyclists, motor vehicles, and transit making connectivity and access important to the ultimate operation of the site.

Responsibilities – Keith will be responsible for senior oversight on the team's project delivery, and technical oversight given his extensive ferry terminal planning and design expertise.

He will also perform independent reviews of the design deliverables in conformance with Stantec's ISO 9001 accredited quality management program.

Relevant Projects:

Kingston Ferry Dock Improvements, Detail Design and Enhanced Design Support during Construction | Design Complete March 2020, Construction ongoing | Project Manager

Work included new terminal building, expansion of the existing pier (expanding the footprint by ~5,500m2 of new pier), addition of secondary berth, new marshalling area, utility building to house electrical equipment and compressors, accommodation of infrastructure to support new electric ferries, auto-mooring system, separate pedestrian boarding bridge, property acquisition (private and public lands), permits and approvals (Transport Canada, Department of Fisheries and Oceans, MECP, species at risk), new high voltage power supply, bubbler system, off-site fisheries compensation, contaminated waste management, risk assessment, constructability reviews, First Nations consultation, public and stakeholder consultation. The project was designed to accommodate ongoing ferry operations throughout construction; initial phase used the existing ramp while later phases use the new secondary ramp for service.

Glenora Ferry Dock Improvements | Project Manager

Major reconstruction of the Glenora terminal of the Glenora Ferry. Work included rehabilitation and reconfiguration of the existing pier, reconfigured marshalling area on Highway 33, new utility building to house electrical equipment and compressors, new washroom building, new hydraulic ramp with positive connection, general site improvements (shoreline access stairs, new storm sewers, retaining walls, landscaping), permits and approvals (Transport Canada,

Department of Fisheries and Oceans), bubbler system. The project also included coordination of Marine Architecture work for ferry system upgrades

Dawson Point Ferry Dock Improvements | Design Complete June 2019 | Project Manager

Detail Design for improvements to the Dawson Point ferry terminal to modify the existing facilities to accommodate new larger ferries. Removed an existing dolphin and replaced it with a short finger pier and made shoreline improvements to remediate erosion damage and prepare the site for new high/low design water levels. Work also included First Nations, public, and stakeholder consultation, permits and approvals (Transport Canada, DFO). This dock was used for fulltime ferry operations during the construction of the Marysville dock.

3.B Core Team Members Availability

To ensure we meet the project milestone dates, we have provided the current availability of our core team members and resources in Table 2 below. The availability of staff is identified as a percentage of their total available hours per month for the duration of the program.

Table 2 Core Team Members Availability

Core Team Member	Years of Experience	Q1 2025	Q2 2025	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Q3 2026	Q4 2026	Q 1 2027	Q2 2027
Roslin Arbuckle – Project Manager	17	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%
Christopher Thomas (Baird) – Deputy Project Manager	18	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%
Kelly Swindle – Environmental Permitting Manager	18	55%	75%	75%	75%	85%	85%	85%	85%	85%	85%
George Huang – Project Scheduler	26	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%
Mike Woods – Structural Engineer – Marine	26	55%	75%	75%	75%	85%	85%	85%	85%	85%	85%
Tejas Goshalia – Structural Engineer – Buildings and Uplands	32	55%	75%	75%	75%	85%	85%	85%	85%	85%	85%
Ray Toh - Electrical Designer – Marine/Civil/Buildings/Uplands	42	55%	75%	75%	75%	85%	85%	85%	85%	85%	85%
Mohsen Imani - Civil Transportation/ Utilities (Designer)	40	55%	75%	75%	75%	85%	85%	85%	85%	85%	85%
Arturo Jimenez – Coastal Engineer	13	55%	75%	75%	75%	85%	85%	85%	85%	85%	85%
Keith Dustin – Independent Reviewer	37	55%	55%	55%	55%	55%	55%	55%	55%	55%	

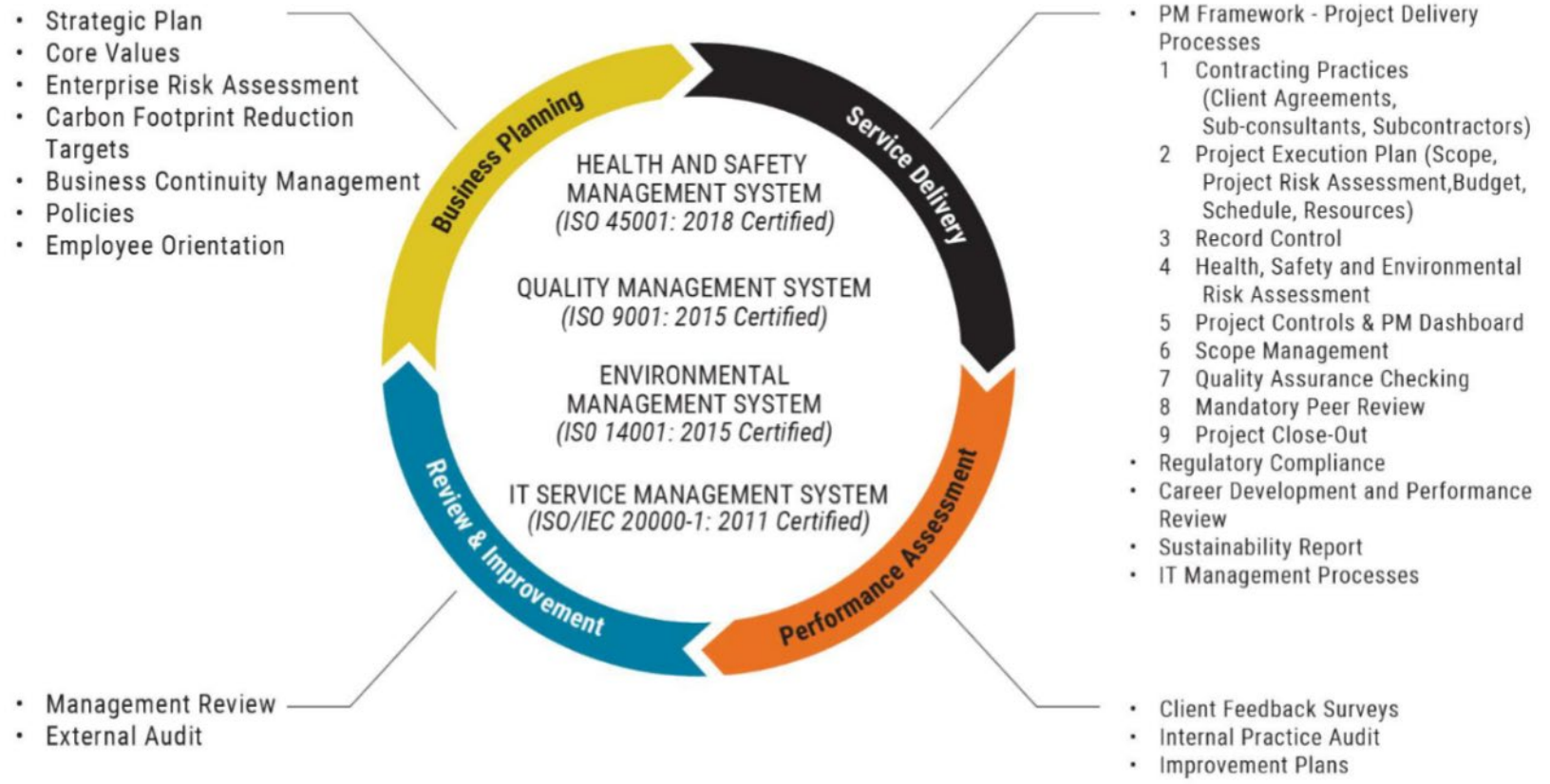
4. Firm's Project Management System (Prime Consultant Only)

4.A Quality Assurance/Quality Control Processes

The program and project scope will be managed by Stantec's Project Manager (PM), Roslin Arbuckle, in alignment with our Project Management Framework described below and meeting the project's specified requirements. Each discipline will be led by the Discipline Lead with demonstrated experience and skill of the respective discipline. Discipline Leads will report to the PM, coordinate daily design activities, and be responsible for the performance and delivery of work of their respective discipline. In each discipline, sufficient staff with relevant experience and skill sets will report to the respective Discipline Leads. Independent Reviews will be conducted by Keith Dustin, and senior oversight and advisory will be provided by Kip Skabar and James McPherson.

At Stantec, projects are managed through a Project Management Framework that identifies critical tasks that will help our PM and team manage risks and quality. The PM Framework is organized based on the four stages of project management: Initiate, Plan, Control, and Close-Out. These tasks represent the project requirements of our ISO 9001 Quality Management System. This system provides Stantec's PMs with the tools and guidance to make managing projects efficient and effective, allowing them to focus on execution.

Figure 2 Stantec Project Management Framework



Stantec's Project Management (PM) Framework is designed to ensure efficient and high-quality project delivery across a diverse portfolio. Here are the key components:

- Scalable Framework: The framework is adaptable to different project sizes and complexities, confirming that the level of rigor matches the project's needs,
- Mandatory PM Requirements: Each project must meet specific requirements, which include critical tasks for managing risks and achieving quality deliverables,
- Compliance with Standards: The framework supports compliance with ISO 9001 (Quality Management), ISO 45001 (Occupational Health and Safety), and ISO 14001 (Environmental Management) standards,
- Project Manager Competencies: Stantec emphasizes the importance of having qualified project managers. We have a prequalification process to ensure that project managers have the necessary competencies,
- Sustainability Criteria: Projects are evaluated for sustainability, considering factors like water use, waste generation, air emissions, and alignment with the UN Sustainable Development Goals,
- Technology Integration: Stantec invests in technology to support project teams, including planning and scheduling tools, as well as project performance workflows for transparency and continuous improvement,
- Learning and Development: The framework includes a learning strategy to support both new and experienced project managers, helping them grow into project leaders capable of managing larger and more complex projects,
- Accountability and Audits: Projects are audited internally and externally to ensure compliance with the framework and continuous improvement.

Quality assurance & quality control (QA/QC) is the day-to-day responsibility of our PM, Roslin Arbuckle and our Technical Advisor, James McPherson, with oversight from our Corporate Sponsor, Kip Skabar. They are supported by our efforts under a fully integrated design approach, thoughtfully structured design team, frequent reporting and communication. To check that WSDOT's requirements are met, and QA/QC objectives are achieved for the project, our team will adhere to a developed Quality Management Plan (QMP) that comply with ISO 9001 and Stantec's Project and Practice Framework. The ISO 9001 quality management principles are addressed in our QMP through the following:

- Inclusive and transparent processes;
- Procedures for information exchanges with WSDOT and all team members;
- Team member responsibilities and relationships;
- Communication protocols; and,
- Systematic approaches to design reviews, and opportunities for continual improvement.

The QMP is based on the philosophy that every team member has a role in delivering a high-quality design and is adopted to:

- Promote work quality and reliability;
- Reduce the risk and consequences of design errors;

- Promote reliable processes;
- Improve productivity and efficiency; and,
- Support regulatory compliance.

We share WSDOTs high standard for quality management procedures. Stantec is ISO 9001 Certified to ensure strict quality control and conformity standards on all our projects. We will be following our internal quality process closely and using our nine-point project management framework during each phase in the design development of the project. The quality management system we will utilize promotes quality practices across the organization with the goal of:

- Reducing the risk and consequences of design errors;
- Helping us grow by promoting reliable processes;
- Improving productivity and efficiency;
- Promoting the quality and reliability of our services;
- Improving the financial performance of our operations;
- Increasing client confidence and loyalty; and
- Supporting regulatory compliance.

The Stantec Quality Management System (SQMS) helps communicate the organization's practices for planning, managing people, client satisfaction, practice management, managing sub consultants, and for continual improvement. The specific elements of the SQMS are:

- Strategic Planning - aligning our focus, planning our work
- People Focus - key processes to help our most valuable resource
- Customer Focus - understanding client requirements
- Service Delivery -focus on project management & delivery
- Supplier Focus - promoting mutually beneficial supplier relationships
- Measurement and Improvement - measurement of client satisfaction, business results, and progress on improvement objectives

4.B Program Budget Tracking and Managing

Our PMs are supported with the technology and skilled staff needed to effectively control project budgets. We have a financial accounting system that allows PMs instant access to clear project details. Through regular reporting and early identification of changes to scope, we will communicate any changes that may affect project budgets. Any scope changes managed by identifying the requirements and obtaining approval/change order from WSDOT prior to proceeding with the work. We will manage multiple task budgets while ensuring that cumulative task budgets do not exceed the overall contract amount. Regular budget reviews and adjustments will be conducted to maintain financial control. Our approach will focus on cost efficiency, ensuring that resources are utilized effectively to deliver maximum value to the WSDOT.

We recognize that cost control is one of the principal drivers to reducing project risk. Our primary requirement of cost control, utilizing our 10-point PM Framework, is to establish a traceable budget, which is developed from a detailed estimate and work breakdown structure (WBS) that integrates the scope and cost information for the project. Our PM Framework includes steps to monitor financials on a regular basis. The work scope and hourly breakdown are translated into the budget using a code of accounts which represent the various types of work involved aligned with the technical efforts. Overall, our tried and tested PM Framework outlined in the previous quality assurance section is a

proven process that our project managers execute daily for tracking and managing program budgets on a wide range of project sizes and complexities around the world.

4.C Scheduling Program Process

Effective schedule control results from diligent project management. It requires a clearly presented and realistic schedule, an efficient and reliable means of collecting progress information, establishment of individual responsibility for each activity, and the communication and organization of means to affect change.

Activities of the ferry terminal, subconsultants, and other organizations' work that requires coordination and/or has impact on Stantec's deliverables will be included in our schedule. Deliverables, submissions, reports, etc., will be identified, including the WSDOT review periods. The schedule will be updated monthly and when any major changes occur.

Discipline Leads, in coordination with the PM, will manage progress of our work. If required, additional management activities and controls can be implemented for the timely completion of tasks. The PM will coordinate, manage, and monitor that tasks are completed in the planned sequence as per the established schedule. Interaction with WSDOT stakeholders, and others will be incorporated in each task where required for collection of applicable data and reviews.

Stantec will develop a detailed project schedule using Microsoft Office Project to assist the project team in tracking design milestones, submittal deadlines, and overall progress of the work. We will include key design drawing reviews at design milestone levels as well as anticipated durations for each task and subtask in our proposed Work Plan. Our project schedule will also indicate anticipated WSDOT function timelines, critical path items, stakeholder engagement program timelines, regulatory agency review time, utility relocations, right of way acquisition, permitting, and construction.

We will work with WSDOT to confirm the Detailed Design Schedule and submit this for review and approval. Upon approval it will serve as the baseline schedule against which all monthly update schedules will be reported. Schedule control is facilitated through ongoing monitoring, updating and reporting and will enable early detection of any potential slippage and planning of any necessary corrective action by the Project Manager.

5. Project Delivery Approach

5.A Project Work Plan Development

A project-specific workplan will be tailored based on the nature of each assignment/ Call-Up and will be presented to WSDOT as part of our response to the Call-Up. The detailed work plan outlines specific tasks, timelines, budget, resource allocation, milestones, and deliverables. This plan will be reviewed and approved by WSDOT's Project Manager to confirm alignment with the project goals.

5.B Work Plan Decision-Making Involvement

Roslin Arbuckle will be our dedicated Project Manager and main point of contact for WSDOT. Roslin is supported by our local Deputy Project Manager, Chris Thomas, who lives within minutes of the Southworth Terminal, and we believe this combination will provide value to WSDOT and will reduce risk should anything unforeseen arise. We feel the proposed combination with multiple Technical Advisors and SME helps to provide redundancy on the team to reduce risk, maximizes individual strengths, and leverages a wider field of experience.

Our core discipline teams will maintain continuous and strong communication both amongst themselves and within each other, understanding their fields of expertise will overlap and require collaboration in completing our various deliverables that will be outlined in the milestone table provided in the workplan. We have elected to bring forward a fully comprehensive Stantec team for this project and leveraging our local and knowledgeable team with Baird. This allows us to start the project with an already established level of communication and familiarity.

While our Project Manager and Corporate Sponsor are ultimately responsible for the delivery of a successful project to WSDOT it's important to note that team management will come from all levels of the project through a "top-down" approach. We will work with our key leads of design and planning while monitoring scope, budget and schedule, without getting into the finer details better suited for each lead and their field of expertise.

5.C Work Plan Components

The project workplan starts with a clear project overview, outlining its purpose, objectives, and goals. The project scope will be detailed, broken down into tasks and subtasks, and key milestones will be identified. Resources, including human resources, materials, and equipment, will be specified, along with a well-structured timeline that highlights task dependencies presented through a Gantt Chart. A budget breakdown, aligning to the WBS, will be prepared, estimating costs and allocating funds appropriately. Risk management is essential, involving risk assessment and mitigation strategies, the risk register will be a live document, monitored and updated throughout the project lifecycle. Approval requirements from WSDOT or stakeholders, if any, will be listed, and a robust communication plan will be established to ensure regular reporting and meetings. Quality control measures will be in place, following Stantec's QMP, to meet the project and WSDOT requirements. Finally, comprehensive documentation will be maintained throughout the project, culminating in a final report summarizing the outcomes. This structured approach will help keep the project organized and on track for successful completion.

Project Initiation and Planning

Kick-Off Meeting: Upon award of a task, Stantec's Project Manager and Corporate Sponsor will conduct a comprehensive project kick-off meeting with the key stakeholders to thoroughly understand project requirements, scope, deliverables, and expectations. This meeting will also establish communication protocols and project governance.

Resource Allocation: Assign the project team, define and confirm roles and responsibilities. All team members are well-versed in Stantec's Project Management Framework and QA/QC guidelines. Allocate additional resources as needed to meet project demands.

Work Plan Development: A project-specific workplan will be tailored based on the nature of each assignment/ Call-Up and will be presented to WSDOT as part of our response to the Call-Up. The detailed work plan outlines specific tasks, timelines, budget, resource allocation, milestones, and deliverables. This plan will be reviewed and approved by WSDOT's Project Manager to confirm alignment with the project goals.

constraints, and build a collaborative project team relationship for the successful completion of this exciting program.

A Project Initialization Meeting will be held approximately one week following the receipt of the Notice to Proceed.

The purpose of this meeting will be to accomplish the following:

- Establish lines of communication and team responsibilities.
- Review project background, discuss design clarifications, and confirm scope of work.
- Review project schedule, critical path items, and key milestones.
- Discuss potential Right-of-Way (ROW) needs and approach to property owner contracts.
- Discuss terminal operations and design requirements.
- Identify specific needs for site topographic and bathymetric survey.
- Discuss specific stakeholder needs and expectations.
- Collect any outstanding background project data needed for detailed design.
- Identify gaps in the available data and recommend solutions.

Our Project Manager will develop a suitable Project Implementation Plan (PIP), or Work Plan, in discussion with the project team during initialization and set up. The PIP will be tailored to reflect the demands of this project. It will define and confirm the design project objectives in terms of scope, budget, schedule, and quality.

Strategic Planning and Preliminary Studies

This includes short-term, medium-term, and long-term planning. In short-term planning we focus on the current allocation of resources and services to solve practical problems like efficient passenger and cargo handling and vessel turnaround. Medium-term planning involves financial and strategic planning, often reported through business plans. In long-term planning we develop port master plans with a horizon of 10 to 30 years.

To predict future trends and demand and for our clients to make informed decisions about infrastructure development, we gather & analyze relevant background information and conduct prefeasibility and feasibility studies, develop planning criteria documents, undertake static and dynamic analysis assignments to determine capacities and define project requirements. Prepare Basis of Design (BOD) reports, conceptual and preliminary layouts.

Design and Engineering

Conceptual and Detailed Design: Develop both conceptual and detailed designs for new marine structures and facilities, as well as for the repair, rehabilitation, upgrade, or replacement of existing ones. Confirm designs comply with relevant standards, regulations, and best practices. Utilize advanced design software and tools to create accurate and efficient designs.

Cost Estimation and Lifecycle Analysis: Prepare detailed cost estimates and lifecycle cost analyses to support decision-making processes. These estimates will consider initial construction costs, maintenance, and operational expenses over the lifespan of the structures.

Ad Hoc Advice: Offer expert ad hoc advice and technical support on terminal matters as requested by the WSDOT. This includes providing guidance on operational issues, maintenance strategies, and infrastructure improvements.

5.D Risk Management and Contingency Planning

Risk Management: Our team will proactively identify potential risks and pitfalls through comprehensive risk assessments and scenario planning. We will develop mitigation strategies to address these risks early in the project lifecycle.

Continuous Monitoring: We will implement a continuous monitoring system to track project progress and identify any emerging issues promptly

5.F Issue Management Strategies

Challenge #1: The effective and efficient management of a large diverse asset inventory. The WSDOT intends to complete various engineering studies, and designs over an extended period.

Solution: Work Group Packaging; Work group packaging will be important to ensure that WSDOT gets best value for money with the overall inspection activities that are to take place. Cost effective work group packaging will be required to ensure that WDOT's budgetary constraints are met with any cost savings that can be obtained by packaging the various inspection works into either combined or single work packages, as employed on our recent inspection program of 108 structures for BC Hydro and various preliminary engineering studies in Fibreco and RIELP projects. Our team will work closely with WSDOT to balance out these factors.

Challenge #2: Marine Infrastructure Modernization

Solution: Most of the Pacific's maritime infrastructure, including ports and shipyards, needs modernization to handle increasing trade volumes and larger vessels. Upgrading infrastructure to support efficient and sustainable operations is a priority, for instance switching truck gates to OCR systems; we have applied this to our most recent detailed design project in the Fraser Surrey Terminal. Designing and upgrading maritime infrastructures involves several engineering challenges

Challenge #3: Ensuring that infrastructure upgrades do not harm the local environment, including marine ecosystems, air quality, and coastal areas.

Solution: Implementing green engineering practices, such as using eco-friendly materials, incorporating renewable energy sources, and designing with minimal environmental disruption in mind. By adhering to the Envision framework, we confirm that projects meet high standards of sustainability and resilience. This includes comprehensive planning to protect marine ecosystems, improve air quality, and preserve coastal areas, ultimately fostering long-term environmental stewardship and sustainable development. Habitat Offsetting would be another approach to adopt, for instance, during the Fairview Terminal expansion in Prince Rupert for which Stantec served as Owner's Advisor, significant habitat offsetting measures were implemented to compensate for the Harmful Alteration, Disruption, or Destruction (HADD) of fish habitat. These measures included the development of several habitat compensation areas south of the terminal, such as intertidal and subtidal rock reefs, subtidal kelp reefs, and soft-sediment benches to support saltmarsh and eelgrass vegetation. This approach not only mitigated environmental impacts but also enhanced local biodiversity and ecosystem health.

Challenge #4: Adapting infrastructure to withstand rising sea levels and more frequent extreme weather events.

Solution: Designing flexible and resilient structures that can be elevated or reinforced as needed. Incorporating climate change projections into the planning and design phases to ensure long-term viability.

Stantec

Stantec is a global leader in sustainable architecture, engineering, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.