CASCADIA

# Corporate Profile

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# Introduction 1.1

Cascadia Project Services Inc. is made up of an experienced team of project professionals that have been owner's representatives and program / project / construction managers across a broad spectrum of public and private sector developments.

The Cascadia Project Services Inc. Team specializes in handling an owner's program and project requirements throughout all development and implementation phases, including:

- Program definition and master planning
- Funding and delivery agency agreements
- Conceptual design
- Feasibility and environmental assessment studies
- Project definition reports (scope, schedule and budget)
- Regulatory approvals and permitting
- Detailed design and engineering
- Contracting and procurement
- Construction
- Startup, commissioning and handover to owners/operators

The Principals of Cascadia Project Services Inc. bring over 80 years of experience of direct, hands-on leadership in project management and Owner's Representative services. Cascadia Project Services Inc. has access to numerous similarly seasoned associates and senior advisors that have worked for and with the Principals. Cascadia Project Services Inc. now brings those skill sets together to offer to clients a complete array of consulting services in achieving their project management requirements.

The list of clients and some of the projects that the Principals of Cascadia Project Services have been involved include:

- TransLink – Roberts Bank Rail Corridor Program, Millennium Line, Canada Line Rapid Transit Project
- BC Ministry of Transportation (BC MoT) – Evergreen Line Rapid Transit Project, 2010 Olympic Winter Games, Sea to Sky Highway Improvement Project, Kootenay Lake Ferry, Kincolith Extension Project, Barnet Hastings People Moving Project

- TI Corp – Port Mann Highway 1 Project
- Greater Vancouver Regional District (GVRD) – Drinking Water Treatment Program, Cleveland Dam Seepage Control Project, Seymour-Capilano Water Filtration Project, Seymour Falls Dam Seismic Upgrade Project, Annacis and Lulu Island Waste Water Treatment Plant Upgrades
- Vancouver International Airport Authority (YVR) – New International Terminal Building and Parallel Runway, West Apron Expansion Project, International Terminal Building Expansion and Enhancement Projects, West Chevron Expansion Interim Works, ITB Hold Bag Screening, East Chevron Expansion Project, East Apron Expansion Project
- Daishowa Canada Ltd – Peace River Pulp Mill, Port Angeles Recycled Paper Project
- Vancouver Trade and Exhibition Centre Expansion Project – Portside Project
- BC Ferries – Swartz Bay Berth 4/5 Redevelopment

Along with many of our associates, the Principals of Cascadia Project Services have enjoyed long and very successful relationships with many of the clients noted above, and found our management skills put to use on additional projects beyond the original mandate, such as virtually all expansions at the Vancouver International Airport from 1992 to 2004. Further examples are our relationships with GVRD, which commenced in 1995 on the Drinking Water Treatment Project, and members that were part of the original group on the DWTP went on to deliver the Seymour-Capilano Filtration Plant and remain involved today. We also have a long history of working with BC MoT, and as a result have a deep understanding of BC MoT's organization and have developed solid and trusted relationships with senior BC MoT staff.

We are dedicated to complete client satisfaction, as we take on the outlook of an owner. The reputation that we have earned is due to our direct, hands-on approach.

All the Principals of Cascadia Project Services live in the lower mainland of British Columbia, so we understand the local market and have vested interests in supporting a thriving region.

The genesis of Cascadia Project Services came from the Principals' and many of the associates' prior employment in the highly regarded firm of Pacific Liaicon and Associates, which was subsequently acquired by SNC-Lavalin Inc. in January 2001. The Principals of Cascadia Project Services have a long history of providing exemplary management services to our clients, from project initiation to turnover. We have a solid approach of managing every project, and our strong discipline in gaining the necessary information and then laying out the foundation for execution is the hallmark of what the members of Cascadia Project Services pride themselves.

# Management Methodology 2.1

Upon being assigned a project, Cascadia Project Services Inc. (CPS) will look to form a seamless project team with the owner's personnel. Where practical, we will seek to establish a consolidated project office where the project team members can take advantage of the synergies resulting from this project structure, which is highly conducive to the timely sharing of information, both formally and informally.

Our approach to every project is based on the premise that tight schedule and budget control, with frequent consultation and reporting to the owner(s), is the most effective way to achieve successful project outcomes and meet the owner's interests.

As owner's Representatives, the CPS team works in tandem with each owner to establish a project's goals and design criteria, and then provides the leadership with an owner's focus to deliver those criteria and goals throughout the design, engineering, tendering, procurement and construction phases of each project. Members of CPS have and are actively proving management consulting services to major clients. These services include program management, project / construction management, procurement management, project oversight, project auditing and high-level project planning advice.

One of the keys to the successful delivery of a project's goals and objectives will be the work required with the various stakeholders in the project, such as funding partners, facility operators, local and regional governments, and environmental and First Nation groups. As owner's Representatives, our team will work on building successful relationships with the various stakeholder groups at the commencement, during execution and at completion of the project timelines.

Cascadia Project Services is capable of offering the following array of Owner's Representative management services. This summary will indicate some of the key points that we feel owner(s) need to focus upon:

### Overall Program/Project Management 2.2

- Establish an integrated project management team comprised of Cascadia Project Services and owner personnel and specialist professionals, in a consolidated project office environment, improving lines of communication and reducing extraneous overhead costs
- Determine a functional and cohesive project team organization, with well-defined lines of responsibility, accountability and reporting
- Establish and implement project policies and procedures consistent with owner organizational requirements
- Identify key project stakeholders and establish clear protocols for stakeholder interface and participation

- In conjunction with the owner(s), develop a creative and viable approach to ensuring the project can and will be adequately resourced with recognition of regional factors and global factors in the construction market

### Project Planning/Conceptual Design/Project Definition Report 2.3

- Liaise with the owner(s) regarding:

    a.) Owner's objectives/requirements

    b.) Funders and key stakeholder requirements

    c.) Community requirements and socio-economic factors

    d.) Environmental requirements

    e.) Safety policies

- Liaise with selected architectural, engineering and other technical consultants to develop comprehensive design concepts to form the basis for project definition studies
- Design appropriate policies, procedures, administration strategies and controls for scope control, budget and schedule reporting and enforcement
- Prepare a **Project Definition Report (PDR)**, which will define the proposed project with complete conceptual design, detailed scope for an accurate estimate of project cost including hard and soft costs, and the project schedule. It would also include a financial plan, a contracting strategy and project management policies and procedures
- The **PDR** becomes the road-map and the benchmark against which the subsequent activities and progress on the Project are measured

### Budget and Schedule Development 2.4

- Establish a realistic but tight project budget with the owner(s)
- Establish major milestone dates for engineering, procurement, advance works, and construction work to ensure on-schedule completion
- Establish a realistic construction and start-up schedule that meets the owner's requirements while maintaining overall cost effectiveness
- Develop phasing programs for the execution of the project to meet project budget and cash flow constraints

## Design Management and Value Engineering 2.5

- Assist the owner(s) to select and retain technical consultants with the appropriate skillsets and availability to design the various facets of the project, and hold consultants accountable to functionality and budget objectives
- Manage consultants, take lead role in and maintain tight design control
- Manage peer review and value engineering processes to optimize the economics during design, including looking for cost-effective alternatives
- Pay close attention to the level of design completion and the extent of design / interference checks within and between design disciplines before work is put out to RFP/tender, so as to avoid potential for subsequent re-design and costly changes in the field
- Hold designers accountable to make sure designs are constructible and within capital budget

## Budget and Schedule Monitoring 2.6

- Hands-on monitoring of work progress with continual budget review within design parameters
- Establish controls for change order management and monitor against overall budget approvals to maintain the budget within original approved budget planning
- Prepare budget reports that will accurately show forecasted costs vs actual costs vs original committed budget values
- Regular weekly schedule monitoring and establish actions necessary to maintain schedule

## Procurement, Expediting and Contract Management 2.7

- Procure the best equipment and services at the lowest competitive prices by:
- Establishing a procurement program to identify those goods and services which the owner(s) could procure directly to gain cost, quality and/or schedule advantages
- Identifying the most optimal procurement methods to achieve best value for money and consistent with funding appropriations
- Pre-qualifying contractors to ensure competitive proposals from the most qualified

- Negotiation based on a program of competitive tendering for consulting, construction and supply contracts
- Payments to architectural/engineering consultants tied to milestone design completion/ review dates
- Ongoing monitoring of off-site / shop fabrication of major equipment and material (e.g. steel) by each vendor to ensure contractor delivery dates are achieved
- Weekly monitoring of all consultant and contractor contracts, from both schedule and costs parameters

**Performance Measures 2.8**

- Be familiar with the contract terms for each individual consultant, supplier and contractor and monitor their activities and deliverables to ensure that the owner's requirements have been met by:
- Progress payment schedules tied to performance
- Enforcement of equipment performance guarantees and warranties
- Withhold final payment until all shop drawings, O&M manuals and final as-builts are delivered and signed off

**Construction Management/Site Safety 2.9**

- Provide experienced senior field personnel to perform hands-on management of architects, engineers, vendors and contractors through continuous monitoring to ensure achievement of schedule and budget objectives
- Through independent consultants, maintain ongoing Quality Assurance/Quality Control (QA/QC) of all installations
- Manage site safety and incorporate the owner's established safety programs, such that the safety program for the construction project meets or exceeds Worksafe BC or the owner's standards, whichever is the higher standard

### Cost Control and Project Accounting 2.10

- Set up project cost control system and procedures in close cooperation with owner's finance and accounting departments
- Provide project accounting personnel to implement the system
- Track payments and expenditures are in line with cash flow projections, and structure cash calls accordingly

### Project Reporting 2.11

- Prepare weekly and monthly project status reports
- Prepare monthly financial reports
- Hold regular project status meetings with the owner
- Chair regular meetings with consultants and contractors – keep accurate minutes of all meetings, complete with action items, responsible party and deadline for completion

### Certification, Testing and Commissioning 2.12

- Develop and maintain an orderly turnover program of major areas and systems to the owner's operating and maintenance personnel

### Infrastructure Funding Appropriations 2.13

- Administer governmental relations and programs to maximize government's provision of available funding for necessary infrastructure and services

### Environmental Management 2.14

- Manage the preparation of environmental impact assessments
- Retain environmental consultants for monitoring compliance
- Make presentations to both internal and public forums

## Approvals, Permits and Licenses 2.15

- Assist owner(s) through the processes necessary to obtain approvals, permits and licenses required by government regulators and utilities, including preparation of applications and submissions
- Provide research services, strategic analysis of corporate positioning, public hearing counseling, and negotiation support services

## Community and Media Relations Management Support 2.16

- Liaise with owner(s) and external communications personnel and technical team members through the public consultation, design and construction phase to ensure communications are based on accurate information and appropriate technical basis
- Assist owner(s) with issues management in the public and media domain

## Commitment to Safety 3.1

Safety is of prime importance in the construction industry, and is an imperative to every owner. Cascadia Project Services will take a proactive role in managing site safety on each and every project. Safety is an attitude that starts with the owner(s).

No aspect of the project is more important than safety, and safety will not be sacrificed for any other considerations. Cascadia Project Services will establish and administer the overall Project safety requirements and the implementation of the safety programs for all personnel, workers and contractors on a project.

Having a good understanding of the safety regulations under Worksafe BC is critical to ensure that those that are charged with safety are being proactive and taking the necessary steps to make sure that every worker goes home safely every night. Where applicable, an overall Project Safety and Security Manual will be developed with the higher standard from Worksafe BC and the owner's safety manual.

## Commitment to the Environment 4.1

Cascadia Project Services team members have extensive experience working on projects that are located in or near environmentally sensitive areas or habitats. As Project Managers and Owner's Representatives, Cascadia Project Services is committed to ensuring that its projects meet or exceed applicable environmental laws and regulations, and also to meet the owners' environmental policies and objectives.

Environmental scopes of services for specialist consultants on a project may include preparation of environmental impact assessments and environmental management plans; review of design and tender documents for incorporation of environmental design criteria and mitigation measures; discussions/negotiations with regulatory agencies; and environmental monitoring during construction.

# Qualifications of Team Members 5.1

With a core of 3 very experienced Principals, along with support staff, and with ready access to associate consultant resources to meet specific project requirements, Cascadia Project Services Inc. is uniquely qualified and positioned to utilize its expertise and flexibility to achieve the client's objectives. When we outline a program for an owner, we will jointly establish the appropriate levels of expertise and durations for members of the Cascadia Project Services Team to satisfy the project's requirements.

# Project Experience 6.1

Below is a partial list and summary description of the projects that Cascadia Project Services staff has been involved:

**Evergreen Line Rapid Transit Project – Burnaby/Coquitlam/Port Moody, B.C.**

- Owner's Representative to oversee the construction of the elevated and at-grade guideway sections and bored tunnel for this $1.4 billion project.
- Provided technical interface between BC MoT and TransLink during the preliminary design phase and procurement phases of the project to ensure that operator inputs were incorporated into the project scope.
- Province representative for construction of the bored tunnel, including quality compliance, issues management during interventions, and public communications technical interface.
- Also responsible for lands acquisition, CP Rail interface, site safety, traffic and communications interface and records management.

**British Columbia Ferry Services Inc. – Swartz Bay and Various Sites, B.C.**

- Members of PLA were instrumental in developing a partnership between BC Ferries and SNC-Lavalin called "Terminal Asset Management" to manage the maintenance and new construction of all BC Ferries terminals. The work involved numerous master plans and Project Definition Reports. B. Gardner was directly involved in the Swartz Bay terminal improvement program with preparation of the Design/Build RFP for the Berth 4/5 superstructure.

**Sea to Sky Highway Improvement Project, West Vancouver to Whistler, B.C.**

- Project Managers and owner's engineer on this $600 million highway improvement project. Our personnel were providing project management services, technical oversight, coordinating all design services and providing leadership and expertise in the critical area of stakeholder management and public communications.

**Kincolith Highway Extension Project, Terrace, B.C.**

- Project and Construction Managers for new 30-km, two-lane, all-weather road linking two Nisga'a First Nations communities in northwestern British Columbia, utilizing the alliance delivery model. The Kincolith Highway Extension traverses some of the most geotechnically challenging terrain in Canada. Capital value of this project was $35 million.

**Lytton Bridge Project, Lytton, B.C.**

- Project Managers for construction of a new bridge across the Thompson River. The project included approach roadworks, retaining wall structures, utility works and reconstruction of Lytton's main street. Capital value of this project was $14 million.

**Kootenay Lake Ferry Project, Nelson, B.C.**

- Procurement Assistance for the $23 million design-build of a new 80-car, 250-passenger ferry built on site in Nelson. The services provided supported the creation of a unique design/build RFP document.

**Roberts Bank Rail Corridor Program**

- Deputy Program Manager for the Roberts Bank Rail Corridor Program, an important 70-kilometre stretch through the communities of Delta, Surrey, Langley City and Langley Township connecting Canada's largest container facility and a major coal terminal at Roberts Bank with the North American rail network.

- Reporting to the Program Director for TransLink to oversee the delivery of nine road-rail grade separations in Delta, Surrey, and City and Township of Langley. The Program was a multi-agency funded initiative between 12 partner agencies: Transport Canada, BC MoT, TransLink, Port Metro Vancouver, the municipalities of Delta, Surrey, City of Langley and Township of Langley, BC Rail, CN Rail, CP Rail and BNSF.

**Seymour-Capilano Filtration Project, North Vancouver, B.C.**

- Program Director / Project and Construction Managers for the project definition, detailed design, procurement, and construction of the $820 million drinking water treatment facilities that consist of a new 1,800 ML/d direct filtration plant to treat water from both the Seymour and Capilano sources, a new 18,000 hp raw water pumping station, and two 7.1-kilometre-long, 3.5-metre-diameter hard-rock tunnels to convey water between the Capilano source and the filtration plant. The new filtration plant is being constructed 11 km south of the Seymour Lake reservoir. Other related infrastructure at the Capilano site includes a 69 kV substation, watermains and a 1.8 MW energy recovery facility and break head tank.
- The treatment process consists of coagulation, flocculation and filtration using deep bed granular media, followed by ultraviolet primary disinfection, corrosion control, and secondary disinfection.
- The management of environmental, archaeological and public/social impacts was also included in our scope of work.
- The management of the tunneling process was particularly challenging, with the original tunneling contractor's contract being terminated at approximately 50% complete, and a new contractor having to be procured while separately contracting for the maintenance of those already completed portions of the twin tunnels.

**Seymour Falls Dam Seismic Upgrade Project, North Vancouver, B.C.**

- Project Managers for construction of a $47 million seismic upgrade to the Seymour Falls Dam to remediate the 40-year-old structure to withstand the Maximum Credible Earthquake (MCE) event. The existing 30-m high dam is a composite structure consisting of a slab and buttress concrete section, a concrete gravity retaining wall, an earthfill embankment and an extensive upstream impervious earthfill blanket. Both the concrete and earthfill portions were significantly strengthened. All construction work was conducted without impact to normal operations of Seymour Falls Dam, which continued to supply drinking water during the construction period.

**Cleveland Dam Seepage Control Project, North Vancouver, B.C.**

- Project Managers for construction of a major $25 million dam remediation project at the Capilano drinking water source.
- Work included upgrades to the earthfill abutment of the dam, plastic concrete slurry wall, major excavation, aggregate processing and zone fill placement, and roller compacted concrete blanket - all upstream of a major salmon hatchery.

**Drinking Water Treatment Program, Greater Vancouver, B.C.**

- Program Managers for the $315 million first phase of the GVWD's Drinking Water Treatment Program.
- Elements of the DWTP included:
  a. New ozone primary treatment facilities and new chlorination and pH adjustment (corrosion control) facilities to treat up to 1,000 ML/d from the Coquitlam drinking water source
  b. New pH adjustment facilities and upgraded primary disinfection (chlorination) facilities at the Seymour water source
  c. Eight secondary disinfection stations throughout the region Pilot Plant Study and Predesign for Seymour Filtration Plant

**Vancouver International Airport, Richmond, B.C. - West Chevron Phase I Expansion, Richmond, B.C.**

- Project and Construction Managers for project definition, detailed design, procurement and early construction works for $200 million expansion of the International Terminal Building and supporting airfield infrastructure. The expansion added four new wide-body gates with dual apron drive bridges. The building expansion added a total of 30,000 square metres of new space including: passenger holdrooms, retail and food and beverage areas, thematics areas, suspended walkways, lounges, circulation areas, ramp offices, service facilities and future outbound baggage area.

**Vancouver International Airport - International Terminal Building Hold Baggage Screening Projects**

- Project and Construction Managers for project definition, architectural and engineering design, procurement and construction of conveyors, expanded utilities and services, building works and baggage control and tracking systems required to support the installation of hold baggage screening (HBS) devices for international and trans-border outbound baggage. These projects added advanced explosive detection X-ray technologies into the baggage systems, as required by Transport Canada regulations; consolidate and upgrade the existing baggage control systems; and provide a number of capacity upgrades to the existing outbound sortation system. Capital value of these projects was $90 million.

**Vancouver International Airport - International Terminal Building (ITB) Enhancement**

**Projects**

- Project and Construction Managers overseeing enhancement projects in the ITB (capital value: approximately $10 million), including:
    a. ITB East Chevron Retail Upgrade
    b. Gates 71 and 83 Sterile Holdroom Security Upgrades
    c. ITB East Chevron Satellite Cruise Ship Facility
    d. International Security Screening Point, Transborder Security
    e. Screening Point, International Holdroom/Tenant Relocation
    f. Canadian Inspection Services (CIS) Transfer Departure Facility

**Vancouver International Airport - West Apron Expansion Project - West Chevron Expansion Interim Works**

- Project Managers for planning studies for expansion of the west wing of the International Terminal Building, which would increase floor space by 35,000 square metres and add nine aircraft loading/unloading gates.
- Project and Construction Manager for the $24.5 million West Chevron Expansion Interim Works, which included design and construction of a bypass taxiway and placement of preload on the West Chevron Expansion building footprint.
- Project and Construction Managers for the $39 million West Apron Expansion, which features 120,000 square metres of paved surface area, additional taxiways, and a multi-purpose de-icing and remote parking area.

**Vancouver International Airport - International Terminal Building (ITB) Expansion Projects, and ITB Passenger Flow Enhancement Projects**

- Project and Construction Managers for the project definition, engineering design and construction of the $130 million International Terminal Building (ITB) Expansion Projects (East Concourse, East Chevron and East Apron Expansions, as well as miscellaneous related projects), and the $3 million ITB Passenger Flow Enhancement Projects.
- These projects increased floor space in the ITB by 32,600 square metres, added seven aircraft loading/unloading gates, added 22 ticketing positions (with space for 34 future positions), and 124,000 square metres of aircraft parking/service areas, new de-icing pads and lagoon.

**Vancouver International Airport - New International Terminal and Parallel Runway**

**Projects**

- Owner's Representative and Project Managers for the project definition, engineering design and construction of the $360 million new International Terminal Building and Parallel Runway.
- The International Terminal Building included 16 aircraft loading/unloading gates, 113 ticketing positions, 53 concessions/service outlets, and 116,000 square metres floor space.
- The Parallel Runway Project included a 3,030 m long x 60 m wide runway, slip formed Portland cement concrete paving, associated taxiways and apron for a total paved area of 500,000 square metres and Category III (low visibility) instrument landing and runway lighting system.
- Pacific Liaicon and the Vancouver International Airport Authority were awarded the "Project of the Year" award from the West Coast and Regional Chapters of the Project Management Institute (PMI).

**BC Hydro Consulting Agreement, Vancouver, B.C.**

- Advisory services to BC Hydro senior management on project/construction management and contracting strategies for upcoming capital projects.

**Vancouver Convention & Exhibition Centre Expansion (Portside Project), Vancouver B.C.**

- Providing management oversight on behalf of the Province on the design and construction of a new $990 million convention centre and associated facilities at a site just east of Canada Place.
- Following project cancellation in October 1999, wind down activities included sale of pre-purchased equipment and materials and negotiations with the Vancouver Port Authority, which resulted in VPA proceeding with the cruise ship terminal expansion component of the project.

**Port Angeles Recycled Paper Project, Port Angeles, Washington**

- Project and Construction Managers for the design, construction and start-up/commissioning of a US $40 million, 190 ton per day recycled paper (de-inking) facility at the Daishowa America Port Angeles Paper Mill.

**Peace River Pulp Mill, Peace River, Alberta**

- Owner's Representative on the design, procurement, construction and start-up of a $600 million, 1,000 tonne per day hardwood (aspen) and softwood bleached craft pulp mill and related infrastructure in northern Alberta.

# Summary - Our Project Management Approach 7.1

Managing projects on schedule and budget on a corporate level was the primary service provided by Pacific Liaicon and Associates (PLA) to private industry and governments since 1970. As can be noted from the projects referred to throughout this profile, the principals of Cascadia Project Services Inc., with their extensive PLA background and discipline, have carried on the tradition of strong and decisive project delivery through a "hands-on" and totally committed approach. This has proven its ability to help deliver on-schedule / on-budget completion to the highest quality standards.

PLA managed these achievements on behalf of its many valued clients through its ability to anticipate and identify potential problems, and by taking the necessary actions to minimize and/or eliminate any and all problems, which would otherwise impact on the owner's stated goals. Cascadia Project Services maintains the same core values and approach to projects.

By being involved on a day-to-day basis with all aspects of the projects, Cascadia Project Services, with their more than 80 years combined experience in successful project management, continues that tradition to ensure that a personal relationship and commitment is maintained with its clients. The aim of Cascadia Project Services, like that of our former firm, is to build a solid reputation as a company that consistently delivers on complete client satisfaction.

As we move forward to take on new projects, Cascadia Project Services Inc. remains committed to this approach, taking into consideration that today's challenging construction market, and the desire for owner(s) to bring their projects to fruition in the shortest time possible, requires the development of creative strategies to ensure that design, engineering and construction are adequately resourced to successfully deliver the project.