



Project Brief of A&E Services

Rogers Pass Staff Housing Development



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PROJECT DESCRIPTION

PD 1 PROJECT INFORMATION

- 1.1 Parks Canada (PCA) requires the services of an architectural firm (the “Consultant”) together with a multi-disciplinary team of sub-consultants for the provision of services required to deliver a staff housing development in Rogers Pass, British Columbia.
- 1.2 Project Title: Rogers Pass Staff Housing Development.
- 1.3 Location of the Project: Parks Canada Maintenance/Operations Compound, Rogers Pass, British Columbia. The project site is located within the Roger Pass National Historic Site (RPNHS) and Glacier National Park (GNP). The Project Site is shown in more detail in the attached Appendix A.

PD 2 PROJECT INTRODUCTION AND BACKGROUND

PD 2.1 PROJECT OVERVIEW

- 2.1.1 The services of a Consultant, are required to undertake and develop a options analysis and business case, pre-design report, conceptual design, a design-build tender package and provide technical support and reviews during and after construction. This will be for a new staff housing development in Rogers Pass, BC.
- 2.1.2 The project consists of options analysis, business case, pre-design, detailed design and construction of a new staff apartment building to meet PCA’s requirements. Services will include site layout options analysis.
- 2.1.3 The Consultant will provide a full Consultant Team including the required expertise in architecture, civil, structural, mechanical, electrical, landscaping, project costing, scheduling, building/fire code analysis, and commissioning.

PD 2.2 ROGERS PASS SITE CONDITIONS

- 2.2.1 The building will be constructed on existing PCA owned land.
- 2.2.2 Rogers Pass is located at an elevation of 1300m asl and receives an average annual snowfall of approximately 9.3 m.
- 2.2.3 Rogers Pass is accessible by road (the TransCanada Highway, TCH) and is approximately 65 km east of Revelstoke, BC and 80km west of Golden, BC.
- 2.2.4 The TCH at and near the summit of Rogers Pass is frequently impacted by highway closures due to avalanche control, motor vehicle incidents, etc.

PD 2.3 ROGERS PASS CONSTRAINTS AND CHALLENGES

- 2.3.1 The Consultant must become familiar with the project site and obtain local information as required. The Consultant must provide services to layout the site to achieve the projects functional objectives.
- 2.3.2 The site is an active maintenance and operational compound which will remain in use and fully accessible by PCA during design and construction.
- 2.3.3 The site is listed on the Federal Contaminated Sites Inventory as a registered contaminated site. As such, additional assessment and/or mitigation measures may be required to ensure there are no adverse risk/impacts to human health or ecological receptors as a result of this project.
- 2.3.4 Available space for additional development in Rogers Pass is limited. The overall Rogers Pass Maintenance Compound is confined by the TransCanada Highway (to the west), Rogers Creek (to the east), a sewage lagoon (to the North) and avalanche paths (to the south).
- 2.3.5 The Mount Revelstoke and Glacier National Park or Canada and Rogers Pass National Historic Site of Canada Management Plan (2022) further defines the available footprint and potential uses based on the applicable Park Zoning areas for the summit of Rogers Pass.



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- 2.3.6 The site is located within a National Park and National Historic Site and the project will require an Impact Assessment including, but not limited to, environmental, cultural and archaeological resources review.
- 2.3.7 The site receives an average annual snowfall of approximately 9.3 m (<https://parks.canada.ca/pn-np/bc/glacier/nature/naturelle-natural/climat>) therefore, the staff housing building must be designed and constructed to maintain significant snow loads. Significant consideration must also be given to minimizing overhead snow/ice hazards from roofs, overhangs, etc. The building's perimeter and all access points to and from the building must be designed to account for snow shedding (if applicable), cornice and icicle development/shedding, etc.
- 2.3.8 All site visits must be arranged through the Departmental Representative.
- 2.3.9 An absolute consideration must be ease of maintenance and easy access to parts for repair of equipment and systems installed in the building. Equally important is the reduction of ongoing Operations and Maintenance costs.
- 2.3.10 The building will need to be designed to reflect the constructability concerns of building within a remote location. This includes realizing the constraints of transport and access to the site. If modular components are utilized, the design must ensure that the individual modules must be easily connectable to one another and designed to ensure that the building envelope at the connection points is as secure as the remainder of the structure.
- 2.3.11 The consultants must develop and deliver an operational guide to provide direction and illustration of how to maintain the building for staff to use to conduct regular maintenance activities.
- 2.3.12 Delivering the construction portion of the project to meet all requirements within a \$25.0M (excluding applicable taxes) construction estimate. Budget control and management is of significant importance in the completion of this project. Utilization of innovative design to reduce the overall cost of the project is critical and design options provided.
- 2.3.13 Defining long lead times for materials, timely reviews of shop drawings and timely responses to Contractor questions must be priorities to ensure no schedule delays occur.

PD 3 PROJECT OBJECTIVES

PD 3.1 FUNCTIONAL PERFORMANCE

- 3.1.1 Provide a pre-design and options analysis report, confirming the functional requirements of PCA and outlining the recommended option for conceptual design development. The options analysis is for the purpose of the development of a business case to support the need for accommodations to be located within Rogers Pass. The options analysis would include the development of advantages and disadvantages of each option and potential costs over a 40-year period.
- 3.1.2 Provide a conceptual design to deliver a forty (40) unit staff housing building in Rogers Pass that responds to the functional requirements of PCA. The proposed building will replace two existing apartment buildings that have reached their end of useful life. The conceptual design will also include an overall site plan which allows for a parking lot adjacent to the building which has a capacity for forty (40) typical passenger vehicles (e.g., sedans, hatchbacks, SUV's, pick-up trucks, etc.).
- 3.1.3 The staff housing building will be serviced by the utilities (electricity, water, sewage treatment plant, etc.) which currently exist in Rogers Pass. The consultant is required to conduct a formal review and assessment of these utilities to ensure adequate capacity and condition for the future building. Parks Canada is currently undertaking a geo-exchange feasibility assessment. Based on the results of this assessment, further testing and analysis may be conducted. To greatly reduce greenhouse gas emissions, if feasible, a geo-exchange system (for heating/cooling) may be required to be incorporated into the design of the new staff housing building.



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- 3.1.4 The staff housing building may be up to three stories. Consideration may be given for a taller building if the required fire suppression code requirements can be met and depending on approval of the massing on the site.
- 3.1.5 The staff housing building must provide, at minimum, the following functional requirements:
- Forty (40) single, 1-bedroom, 1-bathroom units, approximate size 37.5 sq m each
 - Kitchen/dining space, approximate size of 20 sq m – area can be one large space.
 - One (1) bedroom per unit, approximate total size of 10 sq m.
 - One (1) bathroom per unit, approximate total size of 7.5 sq m.
 - Forty (40) storage lockers (1 per unit), approximate size of 2.5 sq m. These storage lockers must be centrally located for ease of use and convenience.
 - One (1) common laundry room, approximate size of 25 sq m, number of laundry units to be determined based on 40-person occupancy.
 - One (1) Mechanical/Electrical room.
 - One (1) common/meeting room, approximate size of 40 sq m
 - Additional inclusive common washroom(s) located on the ground floor to service meeting/common room, cleaners, etc., minimum of four (4) toilets and sinks (to be confirmed).
- 3.1.6 Achieve:
- A design that provides functional, responsive, and efficient living space in keeping with PCA directives and Treasury Board standards.
 - Healthy and safe environments that fully support optimum living requirements.
 - Easy to use and adaptable systems and technologies to support requirements with capacity for growth and change.

PD 3.2 DESIGN QUALITY AND CHARACTER

- 3.2.1 Provide design that will effectively and appropriately serve the PCA for an expected life span of 40 years before major refit.
- 3.2.2 Achieve:
- Design excellence, use of quality materials and precise execution respecting the geography, geology and climate where the building will be located.
 - A design that will reflect the importance and the nature of the functions it serves and fits within the surrounding environment.
 - Quality and construction methods shall be robust and should reflect the expectations defined in CSA Standard S478-95, “Guidelines on Durability in Buildings (Design).”
 - A building that reflects elements of the landscape and location.
 - A fully integrated design.

PD 3.3 BUILDING PERFORMANCE

- 3.3.1 Provide a building and building systems that will enable long-term efficient and cost-effective life cycle performance.
- 3.3.2 Achieve:
- A building that embodies contemporary sustainable design and application principles and is implemented in an environmentally responsible manner.
 - Apply active and passive sustainable strategies, as possible, to ensure that the housing building can be as sustainable and green as possible within the estimated budget. A Life Cycle Cost Analysis (LCCA) should be completed to explore various measures to ensure the best possible performance with the available budget.
 - Healthy and safe environments that meet or exceed all applicable codes for construction, fire, health, and life safety.
 - A building that fully integrates all components and systems (architectural, structural, mechanical, electrical, range equipment, IT, multimedia, and furniture).
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- Building fabric and systems that are of a high quality; designed in response to sound building science, life cycle cost effectiveness, general ease of maintenance and constructed with the best workmanship possible.
- Systems that can be accessed and easily repaired and / or replaced in the building life cycle as required.

PD 3.4 PROJECT DELIVERY

3.4.1 Deliver the project utilizing best practices in support of the PCA's needs, respecting the approved scope, quality, financial budget, and schedule.

3.4.2 Achieve:

- A cohesive functional partnership and open communication between all members of the project delivery team and stakeholders throughout all phases of project delivery.
- An integrated and focused Consultant Team with an in-depth understanding and collective 'buy-in' of the project requirements, scope, budget and scheduling objectives, working constructively to ensure a collaborative and cooperative team approach with knowledgeable and timely input and contribution by all project team members, including representatives from the PCA.
- Rigorous quality assurance reviews, conducted as an integral element of the design process for all major disciplines.
- A rigorous quality management plan to respond and correct, in a timely and effective manner, all issues as they occur.
- Appointment of a competent and qualified Project Architect to provide enduring vision and guidance for the entire project duration,
- Professional conduct in all phases of the project, employing best practices for budget, schedule, quality, and scope management.
- A continuous risk identification and management program employing effective methodologies to avoid unexpected project impacts, and to ensure construction claims avoidance.
- Continuous and comprehensive documentation of the project at all stages of the project implementation for Records of Decisions, project follow up and lessons learned.

PD 4 SCOPE OF WORK

PD 4.1 OVERVIEW – ALL DISCIPLINES (REQUIRED SERVICE)

- 4.1.1 Provide a comprehensive professional service for all Required Services and future Optional Services as outlined by this document: project analysis and schematic design, design development, tender document production, assistance during tendering, construction administration, post construction services, commissioning, and warranty services as described in more detail in the following sections.
- 4.1.2 Ensure integration of PCA requirements during all phases of the project.
- 4.1.3 Maintain consistency and continuity of the multidisciplinary team throughout all project phases.

PD 4.2 PHASE 1 – PRE-DESIGN (REQUIRED SERVICE)

- 4.2.1 Review the existing site, summarize the project mandate, and confirm functional program, project budget, key parameters, key constraints, and project objectives in a Project Pre-Design Report. Phase 1 covers the services described in RS1.
- 4.2.2 Review and summarize functional requirements and building requirements.
- 4.2.3 Undertake options analysis to meet functional requirements and provide recommendation for preferred approach. The options will be developed in conjunction with Parks Canada and be accepted prior to proceeding with the option analysis. This options analysis is for the purpose



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of the development of a business case to support the need for accommodations to be located within Rogers Pass. Options are not limited to, but may include: maintain status quo, remediate/renovate existing structures, purchase, construction or long term lease of staff housing building(s)/unit(s) within or outside of the National Parks.

- 4.2.4 Analysis design and delivery approach of various building methods (e.g., modular components) to define the approach to each RS Phase to consider cost, logistics, schedule and benefits or disadvantages.

PD 4.3 PHASE 2 – SCHEMATIC DESIGN (REQUIRED SERVICE)

- 4.3.1 Provide three (3) distinct and unique conceptual designs for consideration by the PCA for the provision of a new building, ensuring optimal use of the site, and compliance with Authorities having Jurisdiction.
- 4.3.2 Summarize options in a Project Schematic Design Report complete with functional program, key features, opportunities, constraints, risks and estimated construction budgets.
- 4.3.3 Present schematic options and Design Brief/Report for review and approval by PCA.
- 4.3.4 Develop final schematic design, based on PCA selected concept and comments, and submit for sign off.

PD 4.4 PHASE 3 – DEVELOPMENT OF DESIGN BUILD PACKAGE (OPTIONAL SERVICE)

- 4.4.1 Develop all required construction documents to support a Design-Build Tender Package based on the approved schematic design and design report from Phase 2.
- 4.4.2 Prepare and provide documentation for PCA reviews and approvals at 90% complete and tender ready stages of Design Build Package production.
- 4.4.3 After each stage of PCA review, confirm how comments have been or will be addressed in the next stage, or provide alternate solutions to address expressed concerns for PCA signoff.
- 4.4.4 Proceeding to tender with planned addenda or incomplete documentation will not be acceptable.

PD 4.5 PHASE 4 – TENDERING OF DESIGN BUILD PACKAGE (OPTIONAL SERVICE)

- 4.5.1 Coordinate with the Departmental Representative in the development of the Design Build tender package.
- 4.5.2 Attend on-site job showing for construction contract bidders.
- 4.5.3 Record all questions received during job showing.
- 4.5.4 Review all queries received during tender period and provide responses and or addenda as may be required.
- 4.5.5 Assists the Department Representative in evaluating the technical aspects of bids on an as required basis, including evaluation of tender price.

PD 4.6 PHASE 5 – TECHNICAL REVIEW AND SUPPORT DURING CONSTRUCTION (OPTIONAL SERVICE)

- 4.6.1 Periodic construction reviews for conformance to contract documents and contract administration, including provision of bi-weekly site review reports, evaluation and certification of construction progress claims.
- 4.6.2 Review and responds to Requests for Information (RFI's), prepare draft Site Instructions, draft Change Directives, draft Contemplated Change Orders, and draft Change orders for review and issue by the Contract Authority.
- 4.6.3 Review and evaluation of Contractors change proposals and claims.
- 4.6.4 Review and evaluation of changes to construction schedule.
- 4.6.5 Updates to and monitoring of Project Risk Plan.



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- 4.6.6 Attendance at all regularly scheduled project meetings (assuming minimum bi-weekly meetings) by representatives of each key Consultant discipline relevant for the phase of the work.
- 4.6.7 Attendance as required by key Sub-Consultants at special project meetings when required in response to specific technical issues as they arise.
- 4.6.8 Site reviews, documentation and evaluation of contract deficiencies.

PD 4.7 PHASE 6 – POST CONSTRUCTION AND WARRANTY SERVICES (OPTIONAL SERVICE)

- 4.7.1 Follow up on completion of base building deficiencies in support of Final Completion.
- 4.7.2 Technical review of all building systems and installation requirements as may be designed and specified by third parties for coordination and integration with base building systems.
- 4.7.3 Six weeks before the expiration of the warranty period, conduct a site review and document all deficiencies or issues noted that are covered by project warranties.
- 4.7.4 Attend meetings as required with affected contractors, or subcontractors to review requirements for corrective action.
- 4.7.5 Review and document contractor follow up to warranty related corrective work.

PD 4.8 PHASE 8 – TRANSLATION SERVICES (OPTIONAL SERVICE)

- 4.8.1 There may be a requirement that leading up to and during tendering, to meet federal regulations with regards to translation, that translation of documents will be required in a timely fashion. Provide translation of technical documents and tendering related questions into French, as required, with a suitable translator which can translate technical documents.

PD 5 PROJECT DELIVERY APPROACH

PD 5.1 GENERAL

- 5.1.1 This project will use a Design-Build procurement and construction approach. The intent is for the consultant to complete the Required Services and then progress through the Optional Services pending project approval.
- 5.1.3 The Consultant shall prepare the Design Build packages in coordination with the Departmental Representative to ensure full coordination of the work of all disciplines and sequences of construction.
- 5.1.4 The Consultant engaged through this RFP by PCA will provide the required (and if approved, optional) services required under the general direction of the PCA Departmental Representative.

PD 6 PROJECT SCHEDULE

PD 6.1 GENERAL

- 6.1.1 Deliver the staff housing building, to be ready for occupancy in accordance with the project milestone target periods, as identified below. Every effort must be made to achieve construction completion prior to **May 2026.**

Stage	Time
Design Startup	1 week from contract award
Options Analysis	10 weeks from contract award
Pre-Design Report	10 weeks from contract award
Schematic Design Report	16 weeks from contract award



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Tender Ready Construction Documents (Design-Build Package)	April 2024
Tender Period and Contract Award	April – May 2024
Construction Start	June 2024
Substantial Completion	March 2026
Occupancy	May 2026
Post Warranty / Closeout	June 2026 - March 2027

- 6.1.2 Prepare a Gantt chart (or equivalent) using commercially available software, in accordance with the above milestone listing, for review as part of the deliverables identified in the Required Services (RS) Section.

PD 7 PROJECT COST

PD 7.1 GENERAL

- 7.1.1 The estimated preliminary construction cost estimate (Rough Order of Magnitude) in current dollars (excluding applicable taxes), currently is **\$23.0M**.
- 7.1.2 Cost estimates do not include soft costs (e.g., consultant/professional fees, etc.), fixed furnishings and equipment, etc.
- 7.1.3 The project design for all projects must take into consideration the project budget and functional requirements throughout the development of the project to ensure that both Scope and Cost objectives are met.
- 7.1.4 The project budget is based on the above identified preliminary estimate. Estimates for Construction will be developed and updated by the Consultant at identified stages in project development and will be reviewed by the PCA for compliance with the overall project budget. Proceeding to subsequent stages will be subject to PCA approval of estimate variances.

PD 8 SUSTAINABLE DEVELOPMENT

PD 8.1 OVERVIEW

- 8.1.1 Sustainable Development objectives must be addressed throughout the evolution of the project. Sustainable Development is defined in broad terms as a strategy that routinely and consistently includes the consideration of the environmental, economic and societal impact of every decision made for the project. The project sustainable strategies must align with the Government of Canada’s Greening Government Strategy (GGS). <https://www.canada.ca/en/treasury-board-secretariat/services/innovation/greening-government/strategy.html>
- 8.1.2 The following sustainable areas of focus include but are not limited to:
 - Energy efficiency and conservation.
 - Greenhouse gas emissions reduction.
 - Clean energy sources, on-site and off-site generation.
 - Water management and conservation.
 - Pollution prevention.
 - Product selection and resource conservation.
 - Indoor environmental quality (thermal, air, and lighting quality).
 - Site conservation (protection and preservation of valued natural site features).
 - Measurement and Verification to provide an ongoing accountability of energy and building services consumption over time.



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- 8.1.3 For this project, a solid waste management program must be implemented for all construction phases. Service requirements for Sustainable Development are identified in the Required Services (RS) Section.

PD 8.2 DESIGN GUIDELINES AND REQUIREMENTS FOR SUSTAINABLE DEVELOPMENT

- 8.2.1 The building is not required to be certified or registered to any green building programs but the designer is encouraged to incorporate passive and active design strategies and practices where possible. Practices and design strategies from The International Passive House Association (IPHA), Canada Green Building Council (CaGBC), the Green Building Initiative (GBI) and Natural Resources Canada (NRCAN) should be considered and provide guidance to assist in the development of project specific sustainable design strategies.
- 8.2.2 The Consultant shall review and incorporate where applicable the principles of sustainable design as described in PSPC published documentation, available from PSPC at the following link: <http://www.tpsgc-pwgsc.gc.ca/biens-property/sngp-npms/bi-rp/conn-know/enviro/pci-idp-eng.html>
- 8.2.3 A Life Cycle Cost Analysis (LCCA) must be completed for this project based on the preferred schematic design. This will be included in the Schematic Design Report. The Life Cycle Cost Analysis requirements are to compare 4 different options using a 40-year life expectancy and shadow carbon pricing of \$300/ton. The four options include 1) Baseline construction to 25% better than NBCC 2020, 2) Cost Neutral GHG Reduction, 3) Maximum GHG Reductions, and 4) Optimized GHG Reduction (Hybrid). The analysis will include the results of the material and equipment comparisons. In addition, each option will be accompanied by an evaluation of the option which will include at a minimum a list advantages, disadvantages, and the recommendation for a preferred option. There will be a Class 'D' estimates for construction cost of each option. Cost estimate to include all demolition costs associated to the retrofit as well as the new construction aspects. An example of the methodology for the LCCA will be made available upon contract award.
- 8.2.4 The Consultant will provide and update the energy analysis and modeling of the finished product in addition to the energy audit to compare actual performance to the energy model.
- 8.2.5 Provide calculations of energy savings, energy consumptions, energy modelling and all other design calculations by Energy Advisor. Acceptable Energy Modelling Software: IESVE or equivalent commercially available software without custom nor special add-on applications. Consultant to outline accuracy of the software model and risk of performance gaps.
- 8.2.6 Consultant may propose alternate energy modelling software, however, the Consultant is to comment on expected accuracy and provide evidence of no performance gap between modelling results and monitored consumption. "EnergyPlus" will also satisfy the requirement.
- 8.2.7 For Consultants experienced in the international passive house standard and choosing to meet Net Zero Carbon readiness requirement through the international Passive House Standard pathway, PHPP (Standard static monthly –method tool for energy modelling / ASHRAE 140 verified) will be accepted for whole building energy modelling only in lieu of IES-VE hourly dynamic modelling. Hourly dynamic modelling will be required otherwise.

PD 9 DESIGN QUALITY

PD 9.1 QUALITY CONTROL

- 9.1.1 The Consultant is responsible for controlling quality throughout the project. As part of the design quality assurance process the Consultant will be responsible for coordinating disciplines and ensuring that appropriate sign off by each discipline is received before submitting documents to Parks Canada for review.

PD 9.2 RISK MANAGEMENT

- 9.2.1 A risk management strategy is crucial for the PCA Project Management system and integrates project planning into procurement planning. All the stakeholders of a project will be an integral



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part of the risk management strategy. Service standards required for project delivery are outlined in available PSPC publications. Reference link: <http://www.tpsgc-pwgsc.gc.ca/biens-property/sngp-npms/bi-rp/conn-know/risque-risk/index-eng.html>

PD 10 CONSULTANT TEAM

PD 10.1 GENERAL

- 10.1.1 The Consultant Team must maintain its expertise for the duration of the project. The Consultant Team must include at minimum the following disciplines: Architecture (the Consultant), Civil Engineering, Mechanical Engineering, Electrical Engineering, Structural Engineering, Building/Fire Code Engineering, Cost Specialist, Energy Modelling/Analysis Specialist and Commissioning Specialist.
- 10.1.2 The Consultant shall be responsible to co-ordinate and direct all Consultant Team activities.
- 10.1.3 The Consultant Team shall be comprised of competent and qualified personnel having professional and technical expertise with extensive relevant experience and shall be capable of providing the services identified in the Required Services (RS) Section of this Project Brief.
 - Members of the Consultant Team may have the necessary qualifications and expertise to provide services in more than one discipline or specialty.
 - Consultant are permitted to expand their Consultant Team to include additional disciplines as required, in order to successfully deliver the project.
- 10.1.4 Expertise and relevant experience requirements for this project are as follows:
 - Administrative
 - Project Management
 - Scheduling
 - Risk Management
 - Cost consulting
 - Regulatory Analysis, Planning, Design, and Development
 - Building Code
 - Municipal Zoning
 - Fire and Life Safety
 - Site Analysis, Planning, Design, and Development
 - Site Planning
 - Civil Engineering
 - Building Analysis, Planning, Design, and Development
 - Architecture and Specialties:
 - General Architecture
 - Interior Design
 - Sustainable Design
 - Codes and life safety
 - Hardware specialist
 - Structural Engineering
 - Permafrost areas and northern climates
 - Mechanical Engineering
 - Heating Ventilation Air Conditioning (HVAC)
 - Plumbing
 - Fire Protection
 - Indoor / Outdoor air quality design and control
 - Electrical Engineering
 - Power and Lighting
 - Commissioning
 - Budget, Schedule and Risk Analysis, Planning, Design, and Development
 - Cost planning
 - Estimating



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- Life cycle costing
- Change evaluation and cost control
- Time planning, scheduling, and schedule monitoring
- Risk management

PD 11 EXISTING DOCUMENTATION

- 11.1 Available information includes the following and can be found in Appendix A:
 - Rogers Pass Overview Map.
 - Rogers Pass Staff Housing Building Potential Option Locations Map.
- 11.2 Additional information to be provided upon contract award includes:
 - Maps and photos of the potential project site(s) and surrounding facilities/infrastructure and environment.
 - Information and location of existing utilities.
 - Geo-exchange feasibility assessment report.
 - Existing information/reports on known site contamination.
 - Climatic Design Data for Rogers Pass, BC



PROJECT ADMINISTRATION

PA 1 PROJECT ADMINISTRATION

PA 1.1 GENERAL

- 1.1.1 The following administrative requirements apply during all phases of the project delivery.

PA 1.2 CONTRACT AUTHORITY

- 1.2.1 PCA is the Contract Authority.
1.2.2 Changes to the Consultant agreement can only be authorized by the Contract Authority.

PA 1.3 PCA PROJECT MANAGEMENT

- 1.3.1 The PCA Senior Project Manager assigned to the project is the PCA Departmental Representative.
1.3.2 The PCA Departmental Representative is directly concerned with the project and responsible for its progress on behalf of the PCA.
1.3.3 PCA administers the project and exercises continuing control over the project during all phases of development.
1.3.4 Unless directed otherwise by the PCA Departmental Representative, the Consultant is responsible to obtain all Federal, Provincial and Municipal requirements and approvals necessary for the work. Applications and liaison with other GOC departments shall be coordinated through the PCA Departmental Representative.

PA 1.4 LINES OF COMMUNICATION

- 1.4.1 Unless otherwise directed by the PCA Departmental Representative, conduct all project communication through the PCA Departmental Representative.
1.4.2 Formal contact between the Consultant and the PCA Project Team, which includes PCA Representatives, shall be through the PCA Departmental Representative.
1.4.3 Direct communication between Consultant Team members and the PCA Project Team on routine matters is required to enable the discussion and resolution of technical issues, however, no communication shall alter the terms of the project scope, budget or schedules unless directed in writing by the PCA Departmental Representative.
1.4.4 Where the tender is issued by the PCA as in during construction tender call, the PCA is responsible for all correspondence with bidders and awarding of the contract.

PA 1.5 MEDIA RELATIONS

- 1.5.1 The Consultant shall not respond to requests for project related information or questions from the media. All media inquiries are to be directed to the PCA Departmental Representative.
1.5.2 The Consultant shall not use any project related materials, information, drawings, images or photographs in any form for publicity or promotional purposes without the express written authorization of the PCA Departmental Representative, which may be withheld at the sole discretion of the PCA.

PA 1.6 GENERAL PROJECT DELIVERABLES

- 1.6.1 Where deliverables and submissions include summaries, reports, network diagrams, drawings, plans, specifications, or finish schedules, submit deliverables as follows:
- Hard copies: four (2) English
 - Electronic format: One (1) copy English. The electronic deliverables shall be provided using Microsoft applications.
 - Alternate electronic format: the Consultant may submit all work in Adobe Acrobat *.pdf format except for Network Diagrams which must be submitted in their original electronic format.



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- All drawings will be generated and distributed in the format using layering and file transfer protocols as prescribed in the reference document available online. Reference; <http://www.tpsgc-pwgsc.gc.ca/biens-property/cdao-cadd/index-eng.html>
- Record drawings will be delivered in electronic (PDF, CADD and geodatabase or shapefile) and hard copy format.

1.6.2 Construction documents issued for tender purposes must be English.

PA 1.7 ACCEPTANCE OF PROJECT DELIVERABLES

- 1.7.1 While the PCA acknowledges the Consultant's obligations to meet project requirements, the project delivery process entitles the PCA to review work. The PCA reserves the right to reject undesirable or unsatisfactory work. The Consultant must obtain Departmental Representative acceptances during each of the project stages.
- 1.7.2 Acceptance indicate that based on a general review of material for specific issues, the material is considered to comply with governmental and departmental objectives and practices, and that overall project objectives are being satisfied.
- 1.7.3 The acceptance does not relieve the Consultant of professional responsibility for the work and compliance with the contract.
- 1.7.4 The PCA acceptances do not prohibit rejection of work, which is determined to be unsatisfactory at later stages of review. If progressive design development or time / cost / risk updates or technical investigation reveals that earlier acceptances must be withdrawn, the Consultant is responsible for re-designing work and re-submitting for acceptance at the Consultant's cost.
- 1.7.5 Acceptances by other agencies and levels of government must be obtained to supplement the PCA acceptances. The Consultant shall assist the Departmental Representative in securing all such acceptances and adjust all documentation as required by such authorities when securing acceptance.

PA 1.8 COORDINATION WITH SUB-CONSULTANTS

- 1.8.1 Throughout all phases of the project, assume responsibility for co-ordinating the work of any Sub-Consultants and specialists retained by the Consultant.
- 1.8.2 Ensure clear, accurate and ongoing communication of concept design, budget, and scheduling issues including changes as they relate to the responsibilities of all Sub-Consultants and specialists from initial base building reviews to post construction reports.
- 1.8.3 Co-ordinate input for the Departmental Representative's Risk Management Plan.
- 1.8.4 Co-ordinate the Quality Assurance process ensuring submissions of Sub-Consultants are complete and signed-off by the designated senior reviewer of the Consultant.
- 1.8.5 Ensure Sub-Consultants provide adequate site inspection services and attend all required meetings.

PA 1.9 PROJECT RESPONSE TIME

- 1.9.1 It is a requirement of this project that the key personnel of the Consultant and sub-Consultants or specialist firms are personally available to attend meetings or respond to inquiries within two working days of a request by the PCA Project Manager.

PA 1.10 MEETINGS

- 1.10.1 The Consultant with the PCA Departmental Representative shall arrange meetings generally every two weeks throughout the entire project development and implementation period, for all members of the project Team, including representatives from PCA; Consultant Team; and Contractor(s).
- During design and tendering phases. This includes attending meetings, recording issues and decisions, and preparing and distributing minutes.



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- During construction and implementation. This includes attending relevant meetings, preparing minutes, and also to participate in urgent problem-solving meetings. The Consultant and sub-Consultants as required shall be available to attend such meetings.

PA 2 AUTHORITIES, SUBMISSIONS, REVIEWS AND APPROVAL PROCESSES

PA 2.1 FEDERAL GOVERNMENT AUTHORITY/JURISDICTION

2.1.1 The following are authorities having Federal Government jurisdiction over the project:

- Treasury Board of Canada
- Parks Canada
 - Tendering and procurement
 - Contract approvals
 - Contract Authority
 - PCA Departmental Authority
 - Project Delivery
 - Functional design requirements and standards
 - Fire and Life safety
- Public Service and Procurement Canada (construction only)
 - Tendering and procurement
 - Contract approvals
 - Contract Authority
- Environment Canada
 - Canadian Environmental Assessment Act and.
 - Canadian Environmental Protection Act
- National Building Code
 - Building codes and standards

PA 2.2 PROVINCIAL AND MUNICIPAL AUTHORITIES/JURISDICTION

2.2.1 The Federal government does defer to provincial and municipal authorities for specific regulations, standards and inspections. In areas of conflict, the Federal authority prevails.

- Labour Board
 - Employment Standards
 - Construction Safety
 - Designated Substance Management
 - Workers Compensation
- BC Hydro
- Ministry of Environment & Climate Change (British Columbia)
- Zoning
 - Park Management Plan (2022)

PA 2.3 PRESENTATIONS AND SUBMISSIONS

2.3.1 The Consultant will be required to attend all meetings as needed and to make presentations to satisfy Authorities as identified.

PA 2.4 PCA PROJECT DELIVERY TEAM

2.4.1 Purpose of review and approval is for program and budget compliance, design, and technical quality assurance. In addition, the reviews will be circulated to the PCA Fire Marshall for their review and comment.

2.4.2 Submission format will be in the form of reports, drawings and specifications, oral presentation, unilingual English, as required.

2.4.3 Submissions will be reviewed at various phases: Pre-Design Report, Schematic (conceptual) Design Report and Design Build Package.



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2.4.4 Expected review and approval turnaround time will be 2 weeks (10 working days).

PA 2.6 OTHER AUTHORITIES HAVING JURISDICTION

- 2.6.1 Although the Federal Government does not formally recognize jurisdiction at other levels of government, voluntary compliance with the requirement of these other Authorities is a requirement unless otherwise directed by the Departmental Representative.
- 2.6.2 Codes, regulations, by laws and decisions of authorities having jurisdiction shall be observed.
- 2.6.3 In cases of overlap, the most stringent will apply. The Consultant shall identify other jurisdictions appropriate to the project.
- 2.6.4 The PCA will voluntarily comply with the applicable provincial Construction Health and Safety Acts and regulations, in addition to the related Canada Occupational Safety and Health Regulations.

PA 2.7 PUBLIC PRESENTATION AND CONSULTATION

- 2.7.1 Any requirement for a public presentation would be requested and compensated as an additional service.



REQUIRED SERVICES

RS 1 PRE-DESIGN

RS 1.1 INTENT

- 1.1.1 This stage is intended for the Consultant to review and report on all aspects of the project requirements. The Consultant Team will review, gather, and analyse all available program information, consult with PCA to develop the business case and options analysis report, develop a functional program and deliver a comprehensive Pre-Design Report. These approved deliverables will become the formal project work plan and will be utilized throughout the project to guide the delivery.

RS 1.2 SCOPE AND ACTIVITIES

- 1.2.1 Analyze the project requirements / program including any amendments.
- 1.2.2 Analyze all available base building, site information and existing infrastructure.
- 1.2.3 Review all other available existing material related to the project including requirements identified in the Project Brief.
- 1.2.4 Develop and document sustainability strategies to achieve net-zero or net-zero ready buildings.
- 1.2.5 Identify all additional information that will be needed to deliver the project.
- 1.2.6 Undertake a budget, schedule and risk analysis and identify any conflicts that will need to be addressed with respect to scope, quality, schedule, and cost.
- 1.2.7 Identify and verify all authorities having jurisdiction over the project and codes, regulations and standards that apply.
- 1.2.8 Develop an updated detailed work breakdown structure that incorporates all the above together with a detailed schedule including allowances for reviews and approvals for each stage of the project.

RS 1.3 DELIVERABLES

- 1.3.1 Prepare and submit an integrated Stage One Pre-Design Project Report, which includes a functional program, options analysis report and an analysis of modular vs on site construction of project requirements for review and approval by the Departmental Representative. Revise as required by the Departmental Representative. Resubmit for acceptance.
- 1.3.2 The options analysis report will be used for the purpose of the development of a business case to support the need for accommodations to be located within Rogers Pass. The options analysis will include the development of advantages and disadvantages of each option and potential costs over a 40-year period. The Stage One Pre-Design Project Report will consolidate the scope and activities identified above and will be utilized as the benchmark project control document to monitor progress of the project. The report will be used as a basis for monthly reporting of progress and will require supplements and modifications to reflect changes in project parameters as may be identified and accepted throughout the project life cycle.
- 1.3.3 The structure used for the Stage One Pre-Design Project Report shall be used for the required project reports for all subsequent project stages. The content of the subsequent reports will vary according to the project stage.

RS 1.4 STAGE ONE PRE-DESIGN PROJECT REPORT STRUCTURE AND CONTENT

- 1.4.1 Executive Summary
 - The executive summary is intended to provide a précis of the Stage One Pre-Design Project Report and outline any recommendations requiring PCA approval.
- 1.4.2 Administrative
 - Aspects to be included (but not limited to) are:



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- Summaries of project start-up meetings, workshops, partnering sessions.
 - Quality management process for the Consultant Team.
 - Confirmation that all necessary pre-design documentation required for this project is available and confirmation that the information is still current and up to date.
 - Summary analysis of state of project readiness and viability of budget and schedule.
- 1.4.3 Regulatory Analysis
- Aspects to be included (but not limited to) are:
 - Preliminary summary of regulatory and statutory requirements,
 - Preliminary summary of authorities having jurisdiction,
 - Preliminary summary of codes, regulations, and standards, and
 - Summary analysis of regulatory limitations and project impacts.
 - Review and applicability of Federal Government and Parks Canada Directives, Standards and Guidelines (including but not limited to: Departmental Sustainable Development Strategy, Accessibility Action Plan, Inclusive Sanitary Facility Design Directive).
- 1.4.4 Program Analysis
- Aspects to be included (but not limited to) are a review and analysis of options, updated functional program including room data sheets, PCA reports, studies, guidelines, space data sheets, summary analysis of program requirements.
- 1.4.5 Site Analysis
- Aspects to be included (but not limited to) are a review and analysis of:
 - Siting analysis of three potential locations for the Staff Housing Development. Evaluation of each potential location for suitability against the project requirements and provide recommended option.
 - Site features and restrictions (i.e., landscape features, topographical feature, climatic influences, setback requirements, easements, existing adjacent building(s), and / or structures.), etc.,
 - Outline requirements for subsurface and geotechnical studies to support the design.
 - Existing site infrastructure, subsurface and above grade services, including capacities and limitations (i.e., storm water drainage, fire protection, domestic water, power, telecommunications, etc.),
 - Historical/archaeological features, previous uses,
 - Environmental features including sustainable design opportunities,
 - Site contamination,
 - Availability and location of parking facilities (40 units),
 - Summary analysis of Site conditions and project impact.
- 1.4.6 Building Analysis
- Aspects to be included (but not limited to) are a review and analysis of:
 - Substructure,
 - Shell, including superstructure, exterior enclosure, roofing,
 - Interiors, including building levels, interior construction,
 - Services, plumbing, HVAC, fire protection, electrical, telecommunications, building automation,
 - Summary analysis of building considerations.
- 1.4.7 Sustainable Development Strategies
- Potential for environmental impacts and project impacts required by application of the Canadian Environmental Assessment (CEA) Act,
 - Review and assessment of sustainable development design standards to be applied to the project.
-



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- Project approach to minimize environmental impacts consistent with the project objectives and economic constraints.
 - Summary analysis of sustainable development strategies and approach.
- 1.4.8 Budget, Schedule, and Risk Analysis
- Aspects to be included (but not limited to) are:
 - Class 'D' estimate, for construction,
 - Detailed work breakdown structure complete with level four sub-tasks,
 - Analysis of risk implications and preliminary mitigation strategies, and
 - Budget, Schedule, and Risk Analysis section of the pre-design report.
- 1.4.9 Rebuttal to internal/external Quality Assurance Audit
- Aspects to be included (but not limited to) are:
 - Review and analysis of comments provided by the PCA Project Team, and
 - Written response to all comments provided by the above and a summary of project impacts.

RS 2 SCHEMATIC (CONCEPT) DESIGN

RS 2.1 INTENT

- 2.1.1 The Consultant must obtain written authorization from the PCA Departmental Representative before proceeding with Schematic Design.
- 2.1.2 The objective of the Schematic Design stage, also referred to in this Project Brief as Design Concept, is to explore three distinctly different design options and to analyze them against the project requirements.
- 2.1.3 The Consultant Team will explore three distinctly different design concepts presented in sketch format (single line, produced to scale), fully integrated and supported by two or more distinctly different engineering solutions for the structure, mechanical, electrical systems, along with physical or digital massing models, site slides and photographs, energy analysis and life cycle cost analysis, analytical data and calculations and sufficient narrative to allow comparison and analysis against project requirements, budget, and the selection of a design direction for preparation of a final design concept.
- 2.1.4 The Schematic Design will be in sufficient detail to illustrate and communicate the project characteristics. Provide a detailed review and analysis of the project requirements including all updates and amendments to ensure all requirements are fully integrated into the Schematic Design. Out of this process a Schematic Design option will be accepted and authorization to proceed to the next phase.
- 2.1.5 The PCA Departmental Representative, in concert with others shall approve one option to be further developed.

RS 2.2 SCOPE AND ACTIVITIES

- 2.2.1 Review, validate and update the details of the Functional Program requirements, including space data sheets,
- 2.2.2 Develop the sustainable design strategy,
- 2.2.3 Prepare a minimum of three (3) Schematic Design options that are distinct,
- 2.2.4 Analyze each option with regard to the project goals including cost and schedule,
- 2.2.5 Undertake a budget, schedule and risk analysis and identify any conflicts that will need to be addressed with respect to scope, quality, schedule, cost,
- 2.2.6 Present/submit Schematic Design options for review and approval to committees, review groups and authorities having jurisdiction as identified in the Project Administration (PA) section,
- 2.2.7 Provide and/or coordinate all project requirements,
- 2.2.8 Coordinate all services with the Departmental Representative.

RS 2.3 DELIVERABLES



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- 2.3.1 Schematic (concept) design documents illustrate the functional relationships of the project elements as well as the project's scale and character, based on the final version of the functional program, the schedule, and the budget.
- 2.3.2 Prepare and submit, for review and approval by the PCA Departmental Representative, an integrated Stage Two Project Schematic (Concept) Design Report. Revise as required by the Departmental Representative. Resubmit for acceptance.
- 2.3.3 The report will update the Stage One Project Pre Design Report using the established report structure and format, consolidate the Scope and Activities identified above, and will continue to be utilized as the benchmark project control document to monitor progress of the project.
- 2.3.4 The Schematic (Concept) Design Report shall include written narrative, schematic drawings, graphics, model (traditional and / or computer generated).
- 2.3.5 Stage Two Project Schematic (Concept) Design Report aspects to be included (but not limited to) are:
 - Updated Functional Program including base building requirements and room data sheets,
 - Statement of design principles for all disciplines,
 - Drawings, renderings and supporting 3D visualization illustrating the building interior / exterior, site,
 - Outline specifications for building systems and equipment performance,
 - Sustainable Development Strategies and Report,
 - Risk Assessment Report,
 - LCCA Analysis and Report (on preferred option only).
 - Report on any deviations that will affect cost or schedule and recommend corrective measures,
 - Description of implementation plan,
 - Updated detailed schedule,
 - Class 'C' Estimate,
 - Submit Project Log tracking all approved major decisions including those affecting changes to project scope, budget and schedule.

RS 2.4 PRESENTATIONS

- 2.4.1 The Consultant Team shall deliver presentations for the Schematic (concept) Design stage to PCA, as outlined in the PA Submissions, Review, and Approval Process.

RS 2.5 DETAILS

- 2.5.1 Architectural
 - Site plan relationships, building outlines, main accesses, roadways, parking.
 - Concept building plans showing relative disposition of main accommodation areas, circulation patterns, floors, horizontal and vertical space relationships.
 - Elevations and sections.
 - Typical wall details for building envelope.
 - Perspectives and / or 3D visualization.
 - Prepare and submit a report indicating how the design will meet the PCA's operational requirements. Include building areas, summary of spatial/functional requirements and ancillary space requirements (e.g., mechanical, electrical, etc.).
 - 2.5.2 Civil
 - Verification of all site services information.
 - Site plans for the building show any existing and proposed site services and proposed building service connections.
 - 2.5.3 Structural
 - General description of structures, including systems considered and benefits/disadvantages.
-



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- Preliminary design loads for all load cases.
 - Concept drawings of structural systems proposed, including typical floor plans, foundations, lateral systems and explanatory sketches.
- 2.5.4 Mechanical
- The concept submission shall include a description of the specific mechanical requirements and function for each area in the building. Incorporate in the submission a schedule of requirements confirming program requirements for all rooms and identify the mechanical building services to be provided.
 - Explain in the concept submission the manner in which the proposed mechanical systems correlate with users' requirements and in accordance with Sustainable Development requirements.
 - Identify whether full time operating staff will be needed for operating any of the mechanical equipment.
 - Identify location of entry point into the building of all mechanical services into the building.
 - Confirm in square metres the area to be provided for mechanical rooms, and then identify what percentage of total building area this represents. Identify location of mechanical spaces in the building.
 - Carry out preliminary energy analysis on system alternatives.
 - Establish an energy budget for the building and compare it to energy consumption of other similar buildings. Total energy consumed in the building shall be expressed in kWh/sq. m.
- 2.5.5 Electrical
- Provide an electrical design synopsis, describing the electrical work in sufficient detail for assessment and approval by the Departmental Representative. Include feasibility and economic studies of proposed systems complete with cost figures and loads and in accordance with Sustainable Development requirements.
 - Site plan showing location of electrical and telecommunication service entrances.
 - Normal and Emergency power distribution details including a diagram showing distribution up to distribution centres on each floor.
 - Floor plans indicating locations and size of major electrical equipment and distribution centres.
 - Typical ceiling or floor distribution systems for lighting, power, and telecommunications.
 - Fire alarm system concept.
- 2.5.6 Furniture / Equipment
- Prepare a Furniture Recommendation Report based on the Functional Program and on parameters developed in conjunction with the PCA. Report to include an examination of the following: Procurement process and requirements, Furniture type and layout, Power requirements, Finishes.
 - Recommendations are to take into consideration the client's vision, functional requirements, proposed planning alternatives, space allocation and project budget.
 - Prepare a Class 'C' cost estimate for the purchase of new furniture and equipment.
 - Document scheduling requirements for the procurement of new furniture and equipment.



OPTIONAL SERVICES

OS1 DEVELOPMENT OF DESIGN BUILD PACKAGE

OS 1.1 INTENT

1.1.1 The Consultant must obtain written authorization from the Departmental Representative before proceeding with development of a Design Build package.

- The objective of the Design Build Package phase is to develop a package that will be used to Tender the construction project.
- The Design Build Package will guide and direct the Contractor and Sub-Contractors in carrying out their work on the project.
- Prepare drawings and specifications, as required, setting forth in detail the requirements for the construction.
- The Design Build package shall be prepared and submitted at 90% completion and Final Submission for review and approval by PCA.
- Final Submission incorporates all revisions required in the 90% version and is intended to provide the Departmental Representative with complete Design Build Package ready for tender call.
- The Final Submission shall be in English.
- The consultant will update and/or confirm the Class 'C' Cost Estimate for the overall construction project that was developed during the Schematic Design phase.

OS 1.2 SCOPE AND ACTIVITIES

- 1.2.1 Obtain Departmental Representative's approval for the Design-Build Package submissions (90% and final),
- 1.2.2 Confirm format of drawings and specifications,
- 1.2.3 Provide full coordination of all disciplines between submissions,
- 1.2.4 Clarify special procedures,
- 1.2.5 Submit drawings and specifications at the required stages (90% and Final),
- 1.2.6 Provide written response to each disciplines peer review comments and incorporate them into Design Build Package where required,
- 1.2.7 Advise as to the progress of cost estimates and submit updated cost estimates for the tender package as the project develops,

OS 1.3 DELIVERABLES

- 1.3.1 Deliverables shall occur in two stages, completeness of the project development shall reflect the stage of submission: 90% and Final (100%).
- 1.3.2 The Consultant Team shall prepare and submit a Design Build tender package for review and approval by the Departmental Representative. Revise as required by the Departmental Representative. Resubmit for acceptance.
- 1.3.3 90% Submission
- Coordinate all disciplines within and between all tender packages including any scope changes that may be required to remain within budget.
 - Documented responses to PCA review comments from previous submission.
 - Complete written peer reviews with responses to review comments and incorporate them into the Design Build Package where required,
 - Complete specification and Schematic drawings for tender package.
- 1.3.4 Final Submission
- Coordinate all disciplines between all tender packages including any scope changes that may be required to remain within budget.



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- Update 90% submission incorporating any comments/revisions required from the review process and submit Final Design Build Package for review and acceptance by PCA

1.4 DESIGN BUILD PACKAGE PROGRESS REVIEWS

1.4.1 Technical and Production Meetings (Project Delivery Coordination Meetings)

- Production of Design Build Package documents will be reviewed during the meetings arranged by the PCA Departmental Representative and Consultant as required but at maximum intervals of two weeks.
- Representatives from the PCA support staff will be present as arranged by the PCA Departmental Representative.
- The Consultant shall:
 - Ensure that the Consultant's staff and the sub-consultant representatives attend the technical and production meetings as required.
 - Arrange for all necessary data, progress prints.
 - Prepare minutes of the meetings and distribute copies to all participants.

OS 2 TENDERING OF DESIGN BUILD PACKAGE

OS 2.1 INTENT

- 2.1.1 Provide technical support and documentation to the Departmental Representative to support the Contract Authority as required to issue and execute the tender calls, evaluate bids and award contracts.

OS 2.2 SCOPE AND ACTIVITIES

- 2.2.1 Coordinate all activities with the Departmental Representative.
- 2.2.2 Provide technical documentation in the form of plans and specifications to the Departmental Representative as prescribed.
- 2.2.3 The Contract Authority will provide and issue the general conditions of the contract and specific tender requirements to the bidders.
- 2.2.4 Consultant and representatives of each sub-consultant discipline to attend bidders briefing meeting(s),
- 2.2.5 Prepare addenda based on questions arising in such meetings for issue by the Contract Authority,
- 2.2.6 Provide the Departmental Representative, with all information required by Bidders to fully interpret the Design Build Package.
- 2.2.7 Make recommendations for issue of addenda as a result of informal inquiries as required.
- 2.2.8 Provide a summary of inquiries at the conclusion of the tender period for project records,
- 2.2.9 Assist in tender evaluation by providing advice on the following:
 - The completeness and compliance with tender requirements of tender submissions in all respects.
 - The effect of alternatives and qualifications, which may have been included in the tender.
 - Evaluation and explanation of variations of the tender cost which exceed the Class 'C' pre-tender estimate.
 - The bidders' capability to undertake the full scope of work.
- 2.2.10 Examine and report on any cost and schedule impact created by the issue of tender / contract addenda.

OS 2.3 DELIVERABLES

- 2.3.1 Electronic copies of drawings and specifications,
- 2.3.2 Addenda as required,



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- 2.3.3 Changes to the documents, if re-tendering is necessary,
- 2.3.4 Updated cost estimate and schedule,

OS 3 TECHNICAL REVIEW AND SUPPORT DURING CONSTRUCTION

OS 3.1 INTENT

- 3.1.1 Implement the project in compliance with the Contract Documents, and direct and monitor all necessary or requested changes to the scope of work during construction.

OS 3.2 SCOPE AND ACTIVITIES

- 3.2.1 Coordinate all activities with the Departmental Representative,
- 3.2.2 During the implementation of the project, lead activities, in consultation with the PCA Departmental Representative's behalf to the extent provided in this document,
- 3.2.3 Carry out the review of the work at intervals appropriate to determine if the work is in conformity with the Contract Documents,
- 3.2.4 Keep the PCA Departmental Representative informed of the progress and quality of the work and report any defects or deficiencies in the work observed during the course of the site review,
- 3.2.5 Ensure compliance with Commissioning Plan, update plan as necessary,
- 3.2.6 Determine the amounts owing to the Contractor based on the progress of the work, and certify payments to the Contractor,
- 3.2.7 Act as interpreter of the requirements of the contract documents,
- 3.2.8 Provide cost advice during construction,
- 3.2.9 Advise the PCA Departmental Representative of all potential changes to scope for the duration of the implementation,
- 3.2.10 Review the Contractor's submittals,
- 3.2.11 Prepare and justify change orders for issue by the Contract authority,
- 3.2.12 Indicate any changes or material / equipment substitutions on Design-Build Package Documents,
- 3.2.13 During the twelve (12) month warranty period, investigate all defects and alleged defects and issue instructions to the Contractor,
- 3.2.14 Review received Systems Operations Manual and O&M Manual from contractor, reflecting as-commissioned operation of all building systems.
- 3.2.15 Conduct a final warranty review.
- 3.2.16 Confirm:
 - Notice of project with the Workplace Compensation Board (WCB).
 - Relevant inspection agencies notified.
 - Negotiate / finalize occupancy permit with authorities having jurisdiction.
 - Contractor to submit and pay for occupancy permit if required; fees for permit to be handled as a disbursement

OS 3.3 DELIVERABLES

- 3.3.1 Written reports from site visits including persons involved,
 - 3.3.2 Written reports on the progress of the work and the cost of the project at the end of each month with progress claims,
 - 3.3.3 Debrief of Commissioning activities outlining the commissioning process, major activities, and lessons learned from this project,
 - 3.3.4 Review the Systems Operation Manual and O&M Manual to reflect as-commissioned operation and maintenance of each building system
 - 3.3.5 Warranty deficiency list,
 - 3.3.6 Update Project Log tracking all approved major decisions including those affecting changes to project scope, budget and schedule,
 - 3.3.7 Report on Final Warranty Review,
-



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OS 3.4 DETAILS

3.4.1 Construction Meetings

- Immediately after contract award, arrange a briefing meeting with the Contractor, and the PCA Departmental Representative.
- Prepare minutes of the meeting and distribute copies to all participants and to other persons agreed upon with the Departmental Representative.
- In consultation with the Contractor and the PCA Departmental Representative, call job meetings as frequently as required, commencing with the construction-briefing meeting.
- Prepare minutes of the meetings and distribute copies to all participants.

3.4.2 Project Schedule

- As soon as possible after contract award, obtain Project Schedule from the Contractor. Schedule to include.
 - All construction activities
 - All related works
 - Detailed commissioning component shown separately,
- Review the construction schedule, identify conflicts and make recommendations on options to reduce timeline where possible.
- Monitor the approved construction schedule, take necessary steps to ensure that the schedule is maintained and submit a detailed report to the PCA Departmental Representatives concerning any delays.
- Keep accurate records of causes of delays.
- Make every effort to assist the Contractor(s) to avoid delays.
- Ensure the Commissioning Schedule is updated at the start of the Commissioning Phase of the project. Routinely update this schedule throughout the commissioning of the work.

3.4.3 Time Extensions

- Only the Contract authority may authorize any request for Time Extensions. Authorization must be issued in writing.

3.4.4 Cost Breakdown

- Obtain from the Contractor(s) detail cost breakdown on forms approved by the PCA Departmental Representative and submit to the PCA Departmental Representative, with Progress Claims.

3.4.5 Labour Requirements

- The Contractor(s) is/are bound by the Contract to maintain competent and suitable workmen on the project and to comply with the Canada Department of Labour - Labour Conditions.
- Inform the PCA Departmental Representative, of any labour situations that appear to require corrective action.
- The Consultant shall ensure that a copy of the Labour Conditions for the Contract is posted in a conspicuous place on-site.

3.4.6 Bylaw Compliance

- Ensure that construction complies with applicable bylaws and regulations.

3.4.7 Construction Safety

- Construction safety is the responsibility of the Constructor.
- Monitor construction safety programs and practices on site and advise the Departmental Representative of issues of non-compliance.
- At minimum compliance with safety legislation and regulations from the following are mandatory:
 - All construction projects that are occupied by federal employees during construction are subject to the Canada Occupational Safety and Health Act and Regulations as administered by Health Canada.



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- Fire safety provisions during construction must comply with Federal regulations.
- In addition to the above, the Contractor(s) must comply with the provincial and municipal safety laws and regulations, and with any instructions issued by the officers of these authorities having jurisdiction relating to construction safety.
- Ensure the Contractor(s) is/are mandated to provide all required coordination, isolation, protection and reinstatement of the fire protection and suppression systems throughout construction.
- Ensure that the Contractor(s) adhere(s) to the National Building Code (current edition) for safety measures at construction and demolition sites and National Fire Code (current edition) for fire safety at construction and demolition sites and Canada Labour Code part 2.

3.4.8 Site Visits

- Provide construction review services.
- Ensure compliance with contract documents.
- Provide services of qualified personnel who are fully knowledgeable with technical and administrative requirements of project.
- Establish a written understanding with Contractor(s) as to what stages or aspect of the work are to be inspected prior to being covered up.
- Assess quality of work and identify in writing to the Contractor(s) and the PCA Departmental Representative, all defects and deficiencies observed at time of such inspections.
- Inspect materials and prefabricated assemblies and components at their source or assembly plant, as necessary for the progress of the project.
- Any directions, clarifications or deficiency list shall be issued in writing to the Contract authority and the PCA Departmental Representative.
- Provide clarifications on Plans and Specifications or site conditions as required in order that project not be delayed.

3.4.9 Progress Reports

- Report to the Contract authority and the Departmental representative regularly on the progress of the work. Submit monthly reports.

3.4.10 Work Measurement

- If work is based on unit prices, measure and record the quantities for verification of monthly progress claims and the Final Certificate of Measurement.
- When Contemplated Change Notice is to be issued based on Unit Prices, keep accurate account of the work. Record dimensions and quantities.

3.4.11 Detail Drawings

- Provide for the Contract authority information, any additional detail drawings as and when required to properly clarify or interpret the contract documents.

3.4.12 Shop Drawings

- Selected shop drawings will require review by the PCA. Prepare a listing of all required shop drawings for identification of submissions requiring review by PCA. Shop drawings requiring PCA approval shall not be returned to the Contractor until review has been completed.
- On completion of project, forward one (1) copy of reviewed shop drawings to the PCA. Ensure that shop drawings include the project number and are recorded in sequence.
- Verify the number of copies of shop drawings required. Consider additional copies for PCA review.
- Shop drawings shall be stamped: "Checked and Certified Correct for Construction" by the Contractor(s) and stamped: "reviewed" by the Consultant before return to the Contractor(s).



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- Expedite the processing of Shop Drawings.
 - All equipment must be CSA approved, or CSA equivalent. In the case of equivalency, provide letters of approval for use in Canada.
- 3.4.13 Inspection and Testing
- Provide the Departmental Representative with recommended list of tests to be undertaken, including on-site and factory testing.
 - Ensure all testing is detailed within Commissioning Plan.
 - When contract is awarded, assist the Departmental Representative and the Contractor in briefing testing firm on required services, distribution of reports, communication lines.
 - Attend acoustic tests conducted by third party.
 - Witness all factory and on-site testing, including testing during off-hours.
 - Review all test reports and take necessary action with the Contractor(s) when work fails to comply with contract.
 - Immediately notify the Departmental Representative if tests fail to meet project requirements and when corrective work will affect schedule.
 - Assist the Departmental Representative, in evaluating testing firm's invoices for services performed.
 - Assist the Departmental Representative in approving all Contractor's sample mock-ups or model areas that will be used to establish benchmarks for acceptable construction standards.
 - The Contractor will be required to obtain approvals before proceeding with construction of each sample mock-up and model area.
- 3.4.14 Training
- Prior to tender, provide the PCA Departmental Representative, with recommended list of training to be undertaken.
 - Ensure all training is detailed within the Commissioning Plan.
- 3.4.15 Construction Changes
- The Consultant does not have authority to change the work or the price of any Contract(s).
 - Changes, which affect cost or design concept, must be approved by the Contract Authority.
 - Upon PCA approval, obtain quotations from the Contractor(s) in detail. Review prices and forward recommendations to the Departmental Representative promptly.
 - The Contract Authority will issue Consultant-prepared Change Orders to the Contractor(s), with copy to the Departmental Representative and the Consultant.
 - All changes, including those not affecting the cost of the project, must be covered by Change Orders.
- 3.4.16 Contractor Progress Claims
- Each month the Contractor(s) submits a progress claim for work and materials as required in the Construction Contract(s).
 - The claims are made by completing the following forms where applicable:
 - Request for Progress Payment,
 - Cost Breakdown for Fixed Price Contract,
 - Copy of good standing with WSIB,
 - Statutory Declaration Progress Claim.
 - Review and sign designated forms and promptly forward claims to the PCA Departmental Representative for processing.
 - Submit with each progress claim:
 - Updated schedule of the progress of the work.
 - Photographs of the progress of the work.
-



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3.4.17 Materials On-Site

- The Contractor(s) may claim for payment of material on-site but not incorporated in work.
- Material must be stored in a secure place designated by the PCA Departmental Representative.
- Detailed list of materials with supplier's invoice showing price of each item must accompany claim; Consultant shall check and verify the list.
- Items shall be listed separately on the Detail Sheet after the breakdown list and total.
- As material is incorporated in the work, the cost must be added to the appropriate Detail item and removed from the material list.

3.4.18 Acceptance Board

- Inform the Departmental Representative when satisfied that the project is substantially completed.
- The Consultant shall ensure that his representative, sub-consultant representative, Contractor(s) and major sub-trades representatives shall form part of the Project Acceptance Board and attend all meetings as organized by the PCA Departmental Representative.

3.4.19 Interim Inspection

- The Acceptance Board shall inspect the work and list all unacceptable and incomplete work on a designated form.
- The Board shall accept the project from the Contractor(s) subject to the deficiencies and uncompleted work listed and priced.
- The Contractor(s) will be required to provide a work plan of actions and schedule to correct all deficiencies.
- The Consultant shall coordinate with the PCA Departmental Representative to monitor, inspect and report on the progress of deficiencies corrections.

3.4.20 Interim Certificates

- Payment requires completion and signing, by the parties concerned, of the following documents:
 - Interim Certificate of Completion,
 - Cost of Breakdown for Fixed Price Contract,
 - Cost of Breakdown for Unit or Combined Price Contract,
 - Inspection and Acceptance,
 - Statutory Declaration Interim Certificate of Completion,
 - Workplace Safety and Insurance Board Certificate.
- Verify that all items are correctly stated and ensure that completed documents and any supporting documents are furnished to the Departmental Representative for processing.

3.4.21 Building Occupation

- PCA may occupy the building after the date of acceptance of the building by the Acceptance Board. The acceptance date is normally that of the Interim Certificate issued to the Contractor(s).

3.4.22 Operation and Maintenance Data Manual

- One Electronic of all volumes and Four (4) hard copy sets of each volume produced by Contractor(s) in accordance with project specification and verified for completeness, relevance and format by the Architect, Mechanical and Electrical Engineer and submitted to the PCA Departmental Representative prior to interim acceptance or actual start of operation and instruction period, whichever occurs sooner.
- Prior to submission to the PCA Departmental Representative, provide written comment in detail indicating the acceptability of all manuals.



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- The Contractor(s) shall retain one (1) copy of each volume for his record and use during the instruction period.
- 3.4.23 Instruction of Operating Personnel
 - Make arrangements and ensure that PCA designated operating personnel are properly instructed on the operation of all services and systems using the final manuals as reference.
 - Consultant to provide training sessions, as required, on the subject of design intent and systems operations. Utilize Systems operations manual for training sessions.
- 3.4.24 Keys
 - Ensure that all keys and safe combinations are delivered to the PCA as directed by the PCA Departmental Representative.
 - Ensure that the Contractor(s) adhere(s) to House of Commons Restricted Key Control System dated December 13, 1999.
- 3.4.25 Final Inspection
 - Inform Contract Authority when satisfied that all work under the contract has been completed, including the deficiency items. Inspection and Acceptance as a result of the Interim Inspection.
 - The PCA reconvenes the Acceptance Board, which makes a final inspection of the project. If everything is satisfactory, the Board makes final acceptance of the project from the Contractor.
- 3.4.26 Final Certificate
 - The final payment requires completion and signing, by the parties concerned, of the following documents:
 - Final Certificate
 - Occupancy Permit
 - Cost Breakdown
 - Inspection and Acceptance
 - Statutory Declaration Final Certificate of Completion
 - Workmen's Compensation Clearance Certificate
 - Electrical Inspection Certificate.
- 3.4.28 Take-over
 - The official take-over of the project or parts of the project, from the Contractor is established by the PCA Project Team which includes the Consultant and the PCA. The date of Interim Certificate of Completion signifies commencement of the 12-month warranty period for work completed on the date of each certificate in accordance with the General Conditions of the Contract.
 - Provide the PCA Departmental Representative with original copy of Contractor's warranties for all materials and work covered by an extended warranty or guarantee, according to the conditions of the specifications. Verify their completeness and extent of coverage.
- 3.4.29 As-Built Record Drawings and As-Built Specifications
 - Following the take-over, obtain as-built marked-up hard copy from the Contractor(s).
 - Show significant deviations in construction from the original Contract drawings.
 - Verify at each progress payment that the Contractor(s) has/have accurately recorded information on the site as-built set of construction documents.
 - Indicate PMSS / MMS numbers for each piece of mechanical and electrical equipment on each drawing.
 - Check and verify all As-Built records for completeness and accuracy and submit to the PCA Departmental.
 - Review Record Drawings by incorporating final As-Built-information into project drawings. Delivered electronically in both PDF and DWG format



OS 4 POST CONSTRUCTION SERVICES AND WARRANTY SERVICES

OS 4.1 INTENT

- 4.1.1 Provide technical support and documentation to the Departmental Representative as required during the post construction and warranty period.

OS 4.2 SCOPE AND ACTIVITIES

- 4.2.1 General work under the Construction Contract carries a standard twelve (12) month warranty commencing on the effective date of the issuing of Certificate of Substantial Performance. Certain parts of the work, such as roofing, structure, joints and bearings, window and exterior door(s), building envelope, landscaping maintenance and distribution systems may have extended warranties as specified and recommended by the Consultant.
- 4.2.2 The Contractor is responsible for correcting and/or replacing all defects in the work during the warranty period, except for damage caused by misuse, abuse or neglect by others
- 4.2.3 The Departmental Representative will promptly notify the Consultant in the event that defects or alleged defects appear in the work of the Contractor.
- 4.2.4 The Consultant shall investigate all defects and alleged defects in the work during the warranty period and issue appropriate information and advice to the Departmental Representative, or instruction to the Contractor as required.
- 4.2.5 Nine months after Substantial Performance acceptance, the Consultant shall
 - Arrange a ten-month warranty site review with the Departmental Representative, Consultant and sub-Consultants, Contractor, mechanical and electrical sub-Contractors, stakeholders and PCA Maintenance staff.
 - Prepare deficiency list with the Departmental Representative for the Contractor's correction/adjustment prior to the site review and distribute to the site review participants.
 - Update the deficiency list during the site review and distribute to the site review participants.
 - Inform the Departmental Representative in writing when all items listed on the ten-month Warranty Inspection report have been completed satisfactorily.

OS 5 TRANSLATION SERVICES

OS 5.1 INTENT

- 5.1.1 There may be a requirement that during tendering, to meet federal regulations with regards to translation, that translation of documents will be required in a timely fashion. Provide translation of technical documents and tendering related questions into French, as required, with a suitable translator which can translate technical documents.

OS 5.2 SCOPE AND ACTIVITIES

- 5.2.1 Review final IFT package (e.g., specifications, drawings, and supporting documents)
- 5.2.2 Design Consultant will be responsible to provide all required digital documents to a translator if requested from the Departmental Representative.
- 5.2.3 During the tendering period the Design Consultant must consult with a technical translator or translation service to translate questions and answers into both languages.
- 5.2.4 Prepare all addenda based on questions arising in such meetings for issue by the Contract Authority in both French and English.
- 5.2.5 Provide translations in a timely fashion – all documents must be translated within two weeks of any request.
- 5.2.6 Make recommendations for issue of addenda as a result of informal inquiries as required.



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- 5.2.7 Provide a summary of inquiries at the conclusion of the tender period for project records,
- 5.2.8 Analyze, revise, and resubmit requests from the municipal building department with respect to the building permit application.
- 5.2.9 Follow-up with the Municipal Official the status of the building permit application.

OS 5.3 DELIVERABLES

- 5.3.1 Translated copies of drawings and specifications and relevant supplemental information
- 5.3.2 Translation of Addenda, questions and answers as required,



APPENDIX A: AVAILABLE INFORMATION

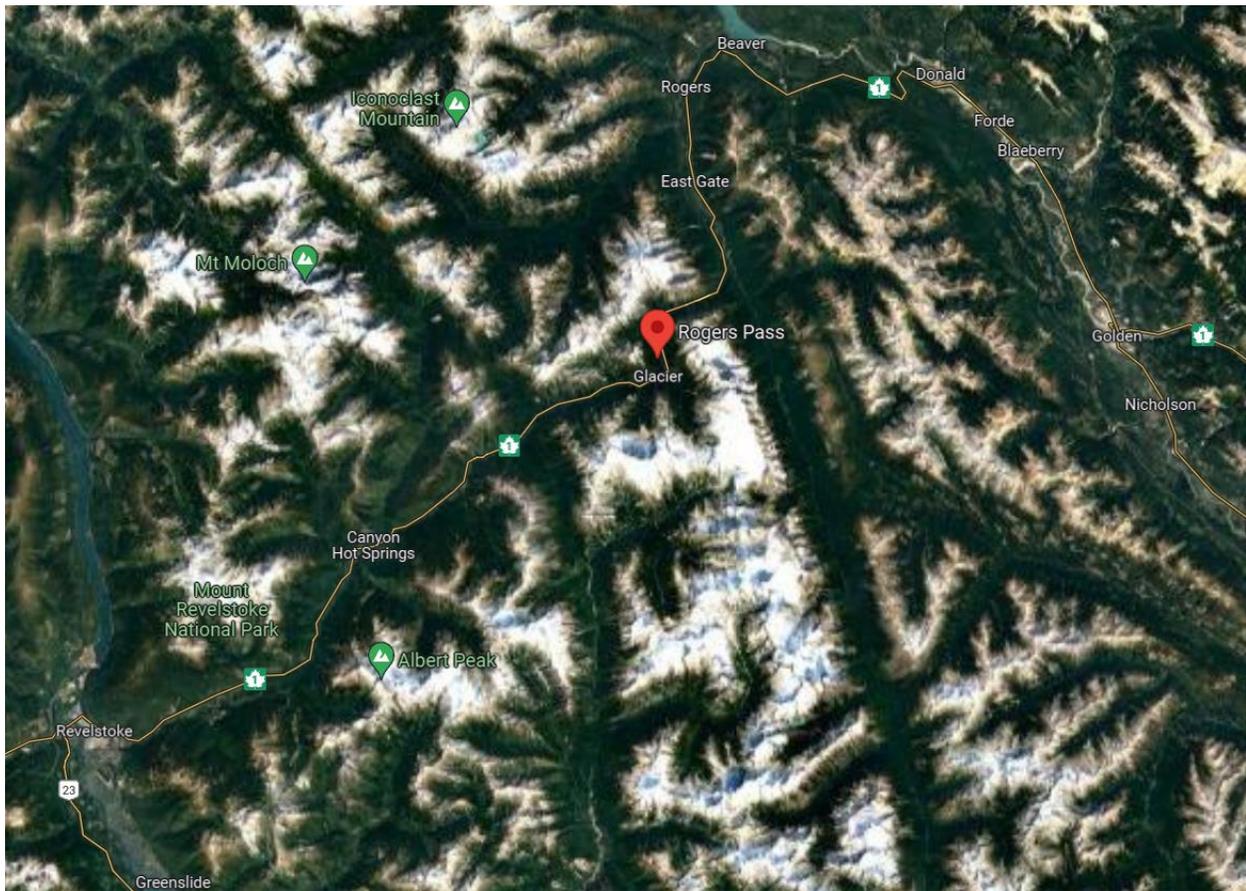


Figure 1: Project Location – Rogers Pass, BC



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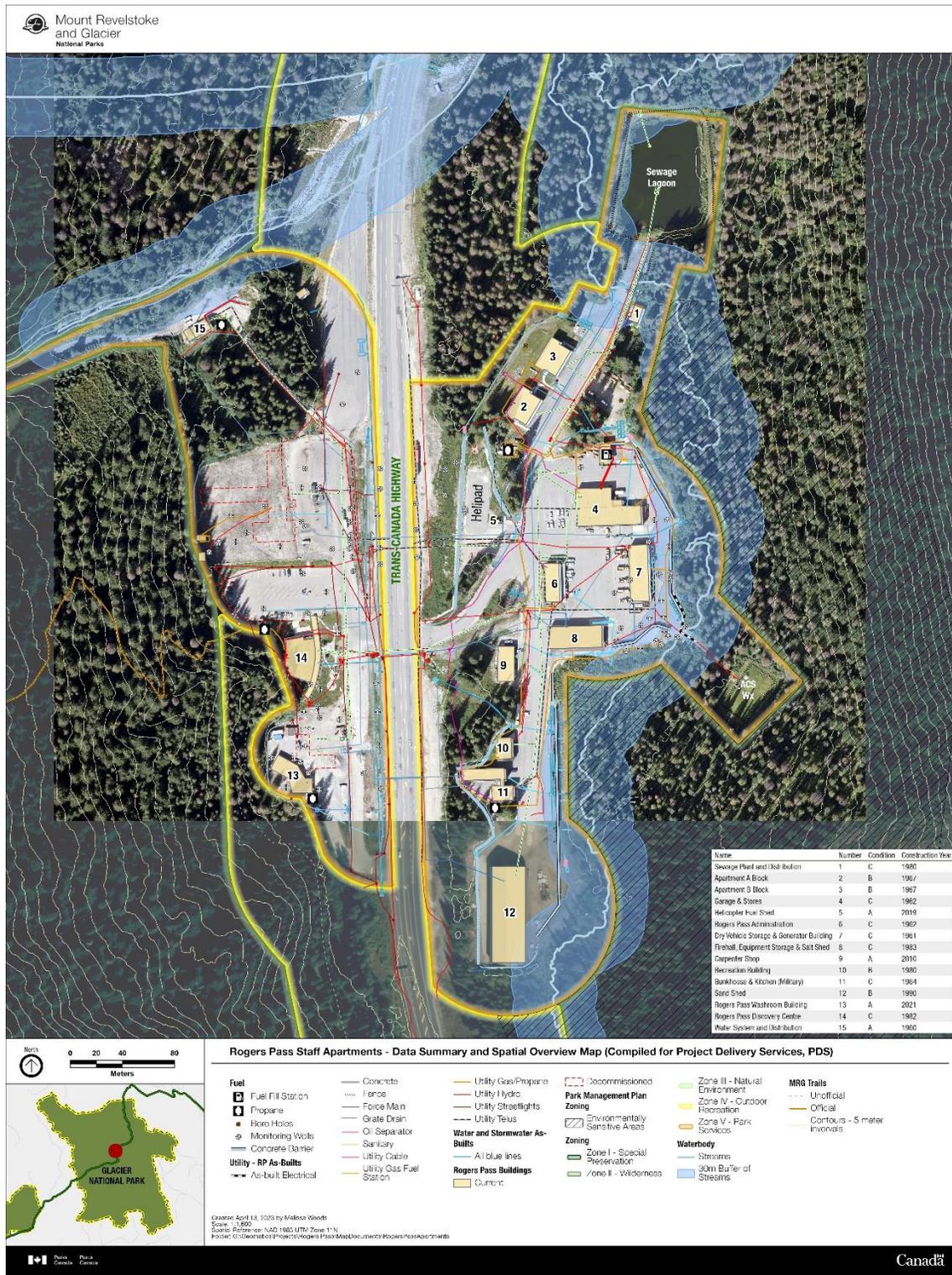


Figure 2: Rogers Pass Maintenance Compound, Glacier National Park, BC



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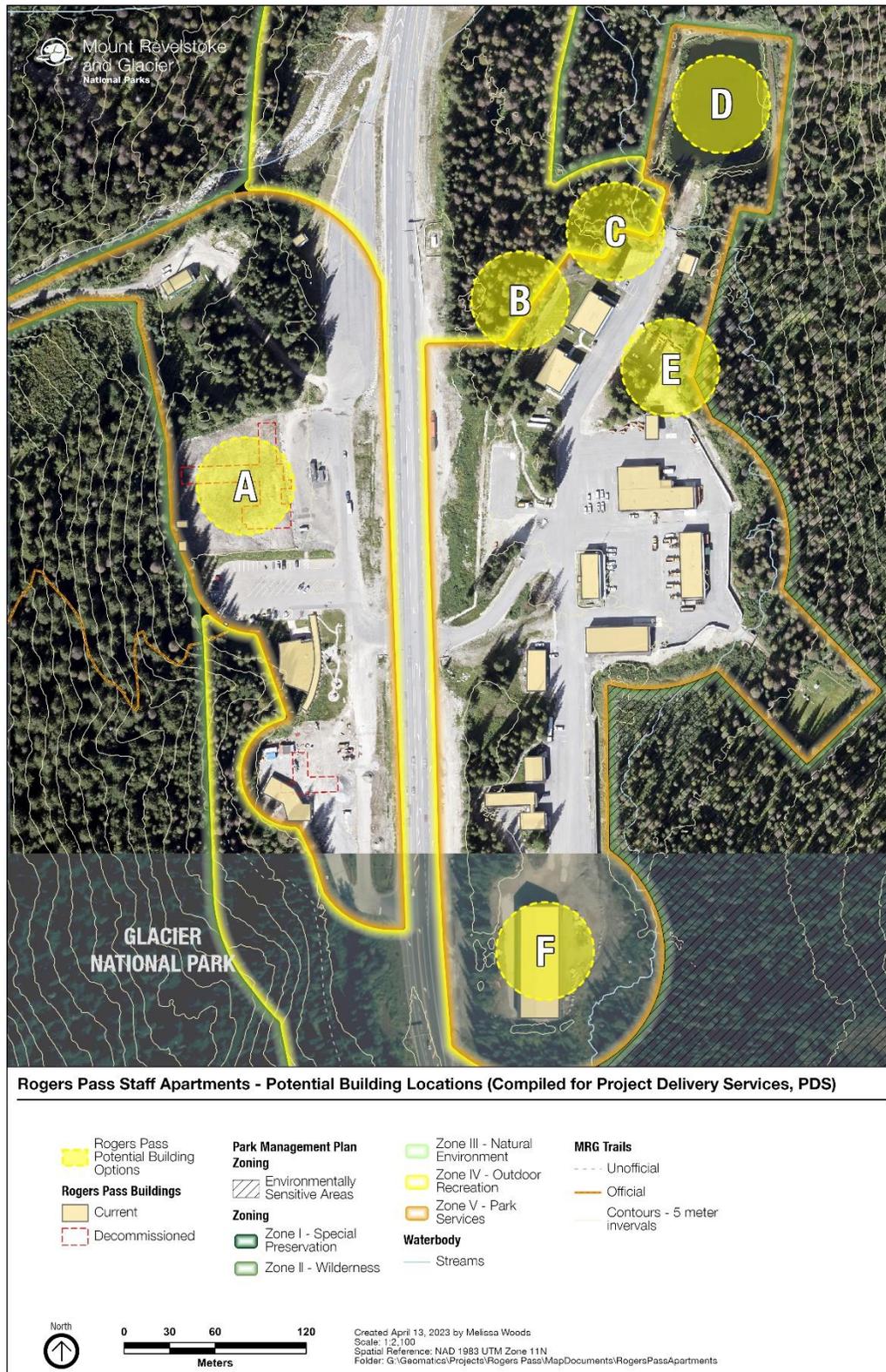


Figure 3: Project Site – Potential Building Location Options