

Solicitation No. - N° de Sollicitation
EJ078-200154/001/FE

Amd. No. - N° de la modif.
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Buyer ID - Id de l'acheteur
FE181

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20200154

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Title of Project – titre du projet
875 HERON ROAD REHABILITATION
PROJECT – TECHNICAL ADVISOR

APPENDIX G – PROJECT BRIEF

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DEFINITIONS

Carbon Neutral(ity) – See Net Zero Carbon.

Carbon Neutral(ity) Ready– See Net Zero Carbon Ready.

Commercial Close – the date when all of the commercial agreements required by PWGSC and the P3 Consortium for the Project, including the Project Agreement, have been finalized and executed.

Design, Bid, Build-Crown Construct (DBB-CC) – refers to the traditional approach to delivering infrastructure projects by PWGSC. This delivery model typically involves PWGSC completing design to 100% and soliciting proposals from the market for the construction of the asset(s) based on the completed design. Following construction PWGSC would either perform the operations, maintenance and lifecycle replacement activities or outsource this function.

Design, Build, Finance (DBF) – a P3 model where design and construction services are contracted to a single design-build consortium that is also required to arrange and provide private sector financing for the design and construction of the infrastructure asset(s). Payment is made by the sponsor (i.e. government) once the project is completely constructed to the standard stipulated by the P3 consortium contract.

Design, Build, Finance, Maintain (DBFM) – a P3 model where design, construction and maintenance and lifecycle rehabilitation services are contracted to a single entity that is also required to arrange and provide financing for the design and construction of the infrastructure asset(s). Financing under this model typically includes short-term construction financing that is repaid by the sponsor (i.e. government) once the project is completely constructed to the standard stipulated by the P3 consortium contract, and long-term financing that spans the term of the P3 consortium contract. Monthly payments are made by the sponsor to repay the long-term financing and to pay for maintenance services delivered by the P3 consortium. The inclusion of long-term financing incentivizes the P3 consortium to deliver the long-term maintenance and lifecycle rehabilitation services as stipulated by the P3 consortium contract. The operating responsibilities for the asset(s) are retained by the public sponsor.

Design, Build, Finance, Operate, Maintain (DBFOM) – a P3 model that has the same structure as the DBFM, but transfers long-term operation responsibilities for the asset(s) to the P3 consortium.

Design Performance Specifications – requirements forming part of the Project Specific Output Specifications that describe the functional performance criteria required for the Facility.

Embodied Carbon – refers to carbon dioxide emitted during the manufacture, transport and construction of building materials, together with end-of-life emissions.

Facility – refers to the 875 Heron Road Ottawa Taxation Campus Headquarters (higher tower) and Data Centre (lower tower) assets described in the Project Brief.

Facility Management – The overall coordinated management of all infrastructure, services, operations, maintenance and lifecycle replacement for the Facility in support of the core function of the Facility. The function of Facility Management is the management of Facility Maintenance Services as defined in R1210D (2018-06-

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21), General condition (GC) 1: General provisions – Architectural and/or engineering services.

Facility Management Output Specifications (FMOS) – requirements forming part of the Project Specific Output Specifications that describe the performance requirements of the Facility and the P3 Consortium for the Facility Management of the Facility.

Fairness Monitor – an independent third-party contracted by PWGSC to observe and advise on the fairness, openness and transparency of the procurement process(es) related to the Project.

Financial Advisor – a company contracted by PWGSC to provide financial and commercial advisory services for the Project.

Financial Close - the date on or after Commercial Close when all of the financing agreements required for the Project, including conditions precedent defined in the Project Agreement, have been finalized and executed.

Greenhouse Gas (GHG) – a gas, such as carbon dioxide and chlorofluorocarbons, that contributes to the atmospheric greenhouse effect by absorbing infrared radiation.

Independent Engineer – an independent advisory firm (or joint venture) to be contracted jointly by PWGSC and the P3 Consortium to monitor all work for the purpose of compliance with the Project Agreement; to sign the required attestations and certifications (e.g. Substantial Completion Certification); and to examine the design documents, supervision plans and the management and quality control system provided by the P3 Consortium.

Key Personnel – Key personnel, as defined in R1410T (2016-01-28), General Instructions (GI) – Architectural and/or Engineering Services – Request for Proposal. For the Project, Key Personnel are listed in Appendix A.

Key Sub-Consultant– Key Sub-Consultants, as defined as Sub-Consultant in R1210D (2018-06-21), General Conditions (GC) 1: General provisions – Architectural and/or engineering services. For the Project, Key Sub-Consultants are listed in Appendix A.

Life Cycle Assessment (LCA) – a technique to assess environmental impacts associated with all the stages of a product's life from raw material extraction through materials processing, manufacture, distribution, use, repair and maintenance, and disposal or recycling.

National Capital Region – the official federal designation for the Canadian capital of Ottawa, Ontario, the neighbouring city of Gatineau, Quebec, and surrounding urban and rural communities as specifically defined at <https://laws.justice.gc.ca/eng/acts/N-4/page-4.html>.

Net Zero Carbon – in terms of the Greening Government Strategy, it is a condition where carbon-free renewable energy sources for the day-to-day operations of a facility is used to reduce the annual GHG emissions to close to zero. Only a small amount of GHG emissions are permitted as a result of the residual emissions associated with a very low carbon electricity grid. The objectives of the Strategy do not include emergency backup power as it is a backup solution and not part of the day-to-day operations. Embodied carbon in construction materials is also minimized. The Government of Canada does not account for or permit the purchase of GHG credits to offset carbon usage.

Net Zero Carbon Ready – in terms of the Greening Government Strategy, it is a condition of a building in which energy consumption is reduced to a minimum through building design strategies and efficiency measures to the point where it

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would be practical in the future to use non-carbon-based fuel sources to meet its energy needs. Embodied carbon in construction materials is also minimized.

Optional Services – services which, at the option of PWGSC, may be added to the Required Services.

Procurement Options Analysis (POA): a quantitative and qualitative assessment of the various P3 delivery models (e.g. DBB-CC, DBF, DBFM) being considered for the P3 Project to determine the P3 delivery model that will deliver the greatest Value-for-Money.

Project – 875 Heron Road Rehabilitation Project to be delivered as a P3 by a P3 Consortium.

Project Agreement – the P3 Consortium contract governing the Project.

Project Brief - As defined in R1210D (2018-06-21), General condition (GC) 1: General provisions – Architectural and/or engineering services.

Project Management Team (PMT) – PWGSC's project management team.

Project Specific Output Specifications – requirements that describe the performance requirements of the Facility and the P3 Consortium for the design and construction of the Facility, as well as Facilities Management, as applicable.

Proponent – as defined in R1410T (2016-01-28), General Instructions (GI) – Architectural and/or Engineering Services – Request for Proposal.

Preferred Proponent – the P3 Consortium Proponent selected by PWGSC during the RFP process to enter into final discussions to complete and sign the Project Agreement.

PWGSC – Public Works and Government Services Canada

Public-Private Partnership (P3) – a long-term performance-based approach for procuring public infrastructure that optimizes the allocation of risk between the partners for the design, construction, financing and maintenance, operation and lifecycle rehabilitation, as applicable. P3 contracts provide incentives to the P3 consortium to deliver an integrated package of infrastructure and services to the standards and timetable established by the contract. P3 transactions include private sector financing in the form of equity and debt (e.g. bank loans, bonds) and can include long-term and short-term financing instruments, depending on the P3 model used. P3 models include Design-Build-Finance (DBF), Design-Build-Finance-Operate-Maintain (DBFOM) and Design-Build-Finance-Maintain (DBFM). P3's do not include outright privatization; the project sponsor (i.e. government) retains ownership of the infrastructure asset at all times. For more information on the Canadian P3 definition and structure (i.e. P3 models, benefits, governance structure, etc.) please refer to the **Federal P3 Screen Guide** (Appendix K).

To further assist in the planning and P3 procurement of public infrastructure, additional information can be found within the **Procurement Options Analysis – Development** guide (Appendix L). Stakeholders are encouraged to utilize this document as it examines in greater detail the P3 procurement approach for the proposed infrastructure. In addition, the **Procurement Options Analysis – Methodology** guide (Appendix M) was developed for federal department and agencies to provide them with a framework for analyzing different options and selecting a preferred approach. Many of the techniques in this document are common financial and analytical techniques based on Canadian P3 best practices.

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P3 Consortium – the entity which enters into the P3 Project Agreement.

Quality Management Plan – the detailed approach to the management of quality for the Work required to deliver the Required Services, and Optional Services, as applicable, that is in accordance with PWGSC standards and industry accepted standards for quality management systems as defined in the Project Brief.

Request for Proposal (RFP) – a formal solicitation, requesting technical and financial information from Proponents shortlisted through a RFQ process, which evaluates and selects a Proponent to enter into an agreement with PWGSC.

Request for Qualifications (RFQ) – a process which evaluates and selects a shortlist of Proponents through assessment of their capacity and capability to undertake a project.

Required Services (RS) –The TA's scope of services requested within this RFP.

Schematic Design – the first phase of design, which is described in detail in section 1.4 Schematic Design and Class C Cost Estimates that translates the functional program into a depiction of space using physical drawings.

Schematic Design Evaluation Guide (SDEG) – a document prepared by PPP Canada used to guide the development of cost estimates for the Project that are used for value of money calculations required for formal P3 approvals.

Scope of Work (Scope) – the Design and Construction/Rehabilitation of 875 Heron Road, with Optional Services for the inclusion of long-term Facility Management.

Specialist – Key Specialist, as defined as Specialist Consultant in R1210D (2018-06-21), General Conditions (GC) 1: General provisions – Architectural and/or engineering services. For the Project, Key Sub-Consultants are listed in Appendix A.

Substantial Completion - The point at which the design and construction work in a P3 has been completed in accordance with the project agreement and the asset is sufficiently complete to be used as it is intended; a certificate of substantial completion in respect of the design and construction work has been issued by the Independent Engineer and has been published pursuant to applicable legislation (e.g. the Construction Act (Ontario)), as applicable.

Subsurface Utility Engineering (SUE) – refers to a branch of engineering that involves managing certain risks associated with utility mapping at appropriate quality levels, utility coordination, utility relocation design and coordination, utility condition assessment, communication of utility data to concerned parties, utility relocation cost estimates, implementation of utility accommodation policies, and utility design. The American Society of Civil Engineers (ASCE) published the standard ASCE 38-02: Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data. The standard defines SUE and sets guidance for the collection and depiction of subsurface utility information.

Technical Advisor (TA) – the party which submitted a responsive proposal to perform the Consultant Services under an Agreement and provides advice on such items, including design and construction, performance specifications and asset-handback requirements.

Technical Advisor Team (TA Team) – The Consultant Team, as defined in R1410T (2016-01-28), General Instructions (GI) – Architectural and/or Engineering Services – Request for Proposal.

Value-for-Money (VfM) – refers to the difference in the risk-adjusted cost of delivering the Project as a P3 versus a

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traditional procurement (DBB-CC). The Value-for-Money estimate is calculated as part of the Procurement Options Analysis.

Work/Works – all activities and things necessary to deliver the Required Services, and the Optional Services, as applicable, in accordance with the terms of the contract.

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DESCRIPTION OF PROJECT

PD 1 PROJECT INFORMATION

1.1 Description

This Project is for the design and construction/rehabilitation of two office towers linked in the main floor and podium located at 875 Heron Road, hereinafter referred to as the Project, using a P3 model. The Project will use industry accepted practices and documents for P3's in Canada. The Project involves the Design-Build-Finance (DBF) of modern and environmentally sustainable office accommodation. PWGSC is also currently assessing the viability of including long-term financing and maintenance in the Project, which would make it a Design-Build-Finance-Maintain (DBFM) contract and, as a result, may require the provision of additional related services by the TA, as described in detail in sections PD 5 and OS 1 - 6.

1.2 Schedule

The Project schedule is expected to be significantly influenced by the Construction Implementation Strategy as outlined in section PD 6. Highlighted below are two Project schedules with notional start and end dates for each of the four Project phases. These tables will be updated from time to time to reflect evolving Project decisions and circumstances.

2-Stage Construction Implementation Strategy:

Phase	Indicative Dates
Award of Technical Advisor Contract	February 2020
Phase I – Pre-Procurement	February 2020 – January 2022
Phase II – P3 Consortium Procurement	July 2021 – March 2023
Phase III – Design and Construction	March 2023 – July 2028
Phase IV – Post-Construction	July 2028 – July 2030

1-Stage Construction Implementation Strategy:

Phase	Indicative Dates
Award of Technical Advisor Contract	February 2020
Phase I – Pre-Procurement	February 2020 – January 2022
Phase II – P3 Consortium Procurement	July 2021 – March 2023
Phase III – Design and Construction	March 2023 – August 2026
Phase IV – Post-Construction	August 2026 – August 2028

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The Project contains many milestones within all four phases. The following two tables outline the schedules of the major milestones, in days, to be achieved for both the one-stage and two-stage construction implementation strategies for each phase of the Project. These tables will be updated from time to time to reflect evolving Project decisions and circumstances.

2-Stage Construction Implementation Strategy estimated milestones:

875 HERON ROAD REHABILITATION PROJECT MILESTONES - 2-STAGE CONSTRUCTION IMPLEMENTATION STRATEGY	
MILESTONES	ESTIMATED MILESTONE DATE (BUSINESS DAYS FROM AWARD)
Award Technical Advisor Contract	0d
PHASE I PRE-PROCUREMENT	
Schematic Design and Class C Estimates (1st Iteration)	120d
Project Specific Output Specifications and Project Agreement (1st Iteration)	180d
Technical Advisor Studies	200d
National Capital Commission and Federal Heritage Building Review Office Approvals	250d
Project Specific Output Specifications and Project Agreement (2nd Iteration)	300d
Prepare RFQ Documents	350d
Final Pre-Procurement Schematic Design and Class C Estimate (Updates)	370d
Final Pre-Procurement Project Specific Output Specifications and Project Agreement	400d
Prepare RFP Documents	460d
PHASE II PROCUREMENT	
RFQ Tender Complete	450d
Prepare Data Room for Release	450d
RFP Open-Period Closes	610d
P3 Consortium Evaluations	660d
Financial and Commercial Close	690d
Treasury Board Submission Approval	720d
P3 Consortium Award	760d
PHASE III DESIGN AND CONSTRUCTION	
Higher Tower Construction & Deficiencies Complete	1420d
Lower Tower Construction & Deficiencies Complete	2110d
PHASE IV POST-CONSTRUCTION	
Post-Construction Support	2610d

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1-Stage Construction Implementation Strategy estimated milestones:

875 HERON ROAD REHABILITATION PROJECT MILESTONES - 1-STAGE CONSTRUCTION IMPLEMENTATION STRATEGY	
MILESTONES	ESTIMATED MILESTONE DATE (BUSINESS DAYS FROM AWARD)
Award Technical Advisor Contract	0d
PHASE I PRE-PROCUREMENT	
Schematic Design and Class C Estimates (1st Iteration)	120d
Project Specific Output Specifications and Project Agreement (1st Iteration)	180d
Technical Advisor Studies	200d
National Capital Commission and Federal Heritage Building Review Office Approvals	250d
Project Specific Output Specifications and Project Agreement (2nd Iteration)	300d
Prepare RFQ Documents	350d
Final Pre-Procurement Schematic Design and Class C Estimate (Updates)	370d
Final Pre-Procurement Project Specific Output Specifications and Project Agreement	400d
Prepare RFP Documents	460d
PHASE II PROCUREMENT	
RFQ Tender Complete	450d
Prepare Data Room for Release	450d
RFP Open-Period Closes	610d
P3 Consortium Evaluations	660d
Financial and Commercial Close	690d
Treasury Board Submission Approval	720d
P3 Consortium Award	760d
PHASE III DESIGN AND CONSTRUCTION	
Higher & Lower Tower Construction & Deficiencies Complete	1621d
PHASE IV POST-CONSTRUCTION	
Post-Construction Support	2125d

PD 2 PROJECT BACKGROUND

2.1 Building Description, Location and Occupancy

In the 1950s, Jacques Gréber created the plan for the National Capital, which intended to decentralize federal employment in the National Capital Region. The plan resulted in the establishment of a federal office node at Confederation Heights, which was auto-centric and characterized by sprawling parking lots and large open spaces. The site contains 16 buildings primarily used for office space. Three major arterial roads divide the site: Bronson

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Avenue, Heron Road, and Riverside Drive. Light Rail Transit, Bus Rapid Transit and local bus routes service the area. Since the 1960s, the site remains largely unchanged and still exemplifies many of these characteristics. Currently, Confederation Heights is currently grossly underutilized. Confederation Heights must be redeveloped to meet current and future needs while creating an iconic federal employment node suitable for the Nation's Capital.

Located at 875 Heron Road, the Ottawa Taxation Complex is a Crown-owned asset and is the headquarters of CRA. It is considered a key site given its location between the RA Centre and other PWGSC-owned sites. Built in the 1970's following the Modernist era, the building complex is easily visible from the primary road network surrounding as a pavilion in a park-like setting. The simplicity of large areas of manicured lawn and grouped tree plantings in the lawns reinforced the park-like pastoral setting. The complex comprises of the 11-storey Taxation Data Centre and the 5-storey Taxation Headquarters. It has continually been occupied by CRA, which reports an ongoing requirement for the accommodations, and a preference to consolidate numerous functions at this location.

The towers are physically linked at grade and below grade through a tunnel system, and a two-storey cafeteria pavilion. Figure (1) shows the location of the complex as part of the larger campus known as the "Confederation Heights".



Figure 1 - The Ottawa Taxation Complex, 875 Heron Road, Ottawa (shown in red circle)

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The Taxation Data Centre has approximately 32,983.9 sq. metres of usable office space. The building accommodates CRA's Ontario Region (CRA-OR) offices, among other CRA groups (i.e. CRA-HRB and CRA-FAB) on the first eight floors. Until recently, the two top floors accommodated a data centre for use by the CRA's Information Technology Branch (CRA-ITB) business units. Currently, the two top floors are vacant. Limited decommissioning is planned for 2019. According to the Building Owners and Managers Association (BOMA) standards the office accommodation in the building is considered to be of "Class B" quality. A Building Condition Report (BCR) completed in 2014 identifies the overall condition of this asset to be "average" and recommends numerous capital improvements and repairs. At the present time, the office accommodation in the building is not in compliance with the Government of Canada Fit-up Standards.



The Taxation Headquarters Building has approximately 13,500 sq. metres of usable office space. The building currently houses part of CRA's Information Technology Branch (CRA-ITB). At the present time, the office accommodation in the building is not in compliance with the Government of Canada Fit-up Standards. A Building Condition Report (BCR) completed in 2014 identifies the overall condition of this asset to be "average" and recommends numerous capital improvements and repairs.



The location and siting of the building pose a number of challenges. The building's current circulation layout is car centric, with large setbacks and service parking lots undermining the provision of greenspace. For example, to the south and southeast are a number of access/exit connectors that join with the high-traffic arterial thoroughfares of Bronson Avenue and Heron Road. The layout has resulted in large areas of green space being segregated from any other use other than accommodating these vehicular connector links. As such, the current vehicular layout limits the potential for the site to accommodate municipal building improvements as well as negatively impacts user experience, in particular pedestrians and cyclists.

The building itself is a considerable walk from the current LRT station, transit way, and food and retail amenities. The walking time is well outside the limits of the six-minute walk, a best practice urban design principle between amenities. The topography of the site, although flat near the building, has a significant grade differential to the north and northeast. This poses accessibility challenges for pedestrians and cyclists linking with Billings Bridge, the RA Centre and the Rideau River. It also restricts the building of storm water retention ponds and geothermal capabilities. The current tree canopy is extremely sparse affording little-to-no protection to pedestrians and cyclists in the winter from the wind and in the summer from the sun. The building's placement on top of the plateau exposes the building to harsh climatic conditions and strong northwest winds in winter. As such, the experience of site users, in particular pedestrians and cyclists, is adversely impacted.

2.2 Recognized Federal Heritage Building Designation

In 2017, the campus was designated a Recognized Federal Heritage Building by the Federal Heritage Building Review

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Office (FHBRO). The following has been identified as the major character-defining elements of the building's Heritage value:

Its brutalist and expressionist features as reflected in its multi-form and expressive massing, angular Geometry and modular façades that emphasize the hard and the angular, with their squares, rectangles and recessed window". Also, the "balance and juxtaposition of building components for visual interest, as well as, the functional design of the interiors and the exterior cladding using pre-cast concrete parts and panels.

For exterior finishes, the FHBRO's Statement of Potential Heritage Value for 875 Heron Road refers to "*the interesting modular, sculptural facades, that emphasize the hard and angular; the balanced juxtaposition of the building components, which adds visual interest and functions well as a whole; the very good quality of workmanship and materials, including pre-cast concrete elements, black concrete aggregate, pre-cast black and white concrete panels, glass and black porcelain enameled spandrels.*"

For interior finishes, the FHBRO's Statement of Potential Heritage Value for 875 Heron Road refers to the "*simplicity and flexibility" of the open plan office space with access to natural light, as well as mentions that the "building features very good craftsmanship and durable materials, including granite and cherry wood on the interiors.*"

Interventions to these character defining elements (CDEs) should be carefully considered and any modifications should be done in accordance with the Standards and Guidelines for the Conservation of Historic Places in Canada, 2010.

2.3 Existing Building and System Condition

Many of the building systems are original and are now at the end of their useful service life. In addition, recently it has been reported that there is asbestos containing materials (ACM) within the building. The removal of asbestos and other designated substances is a significant and important element of the Project and is anticipated to be a considerable constraint to the ultimate approach to redeveloping the buildings. In anticipation of the planned major rehabilitation, no major rehabilitations or upgrades have been undertaken in recent years.

2.3.1 Architectural Conditions

Exterior Finishes: The eleven (11)-storey higher tower (data centre) and the five (5)-storey lower tower (headquarters) exterior walls are clad primarily with architectural precast concrete panels between the exterior columns. Each tower is composed of modular bays with deep recessed windows, which are found above the ground floor level. The recessed podium of the towers at the ground floor level, the link building and the cafeteria pavilion are enclosed with aluminum storefront windows with aluminum glazed doors.

There are numerous precast concrete panel wall compositions with varying effective R-values of R6.7 to R15.9. The R-values of the existing building envelope are significantly impacted by thermal bridging attributed to the exposed concrete structural columns, upstand perimeter beam and poured-in-place horizontal sun canopies. These elements are neither insulated on the exterior face, nor thermally broken, which results in significant thermal bridging at all floor levels.

A number of water leaks through the building envelope have been reported, causing some interior water damage to a number of tenants' assets. Localized repairs have been completed to address these leaks.

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A number of exterior caulking and sealants contain asbestos.

Windows: All the windows, curtain walls and storefront windows are original to the building construction and are considered to be in fair condition but approaching the end of their life expectancy. The R-value of the existing double-glazed window assembly is R2.5.

Roof: The typical roofing system installed in 1996 is a protected (inverted) built-up bituminous membrane roofing system. The main roofing systems will reach their expected service life (25 years) in 2021. The R-value of this existing roof compositions are R13 and R17 based on the insulation thickness.

Interior Finishes: The interior finishes of 875 Heron Road have not undergone any significant modifications since the original construction and are now reaching the end of their service life. The interior finishes contain a significant amount of Designated Substance that should be taken into consideration in the planning, phasing and estimating of the Work. Terracotta tile block partitions are found throughout the buildings, typically at the building cores, inside the exterior walls, and in the basement partitions. The mortar in these partitions is Asbestos Contained Material (ACM). These partitions do not meet current seismic codes.

There are a number of areas within the interior and exterior that were deemed non-compliant to the accessibility requirements of CSA Standard B651-12 including but not limited to washrooms, signage, corridors and exterior parking areas and routes to the main entrance.

2.3.2 Structural Conditions

The 875 Heron Road site consists of a building complex with several cast-in place concrete structures linked together on pile foundation. The majority of the building complex consists of one way reinforced concrete roof and floor slabs on reinforced concrete joists and beams which are supported on reinforced concrete columns. Lateral stability in the two towers is achieved via concrete moment frames. It appears that all aspects of the structure are generally in good condition with few areas of concern such as concrete delamination of a few beams in the basement due to water infiltration.

Seismic Capacity: The majority of the building complex meets 100% of the 2015 National Building Code seismic forces. A seismic report completed in 2017 also noted that the headquarters building is constructed as three separate structures with minimal separation, which does not comply with NBC requirements. Several columns in the Canteen Building only were able to meet 60% of the 2015 NBC seismic forces. All operational & functional components are not restrained for seismic forces.

The 2017 assessment also addresses the hollow terracotta block walls found in both buildings. The report notes that some of the terracotta walls were not able to resist the forces due to the building's movements under a design seismic event. The report further recommended that the terracotta walls be reinforced or replaced. The mortar used in the joints of the terracotta block walls contains asbestos.

2.3.3 Mechanical Conditions

In general, all mechanical systems are have reached or approaching the end of their useful service life and are expected to be replaced.

Elevators: The higher tower is served by seven gearless, traction passenger elevators and one freight elevator. Parts of the elevators were modernized in 2011 and 2012 with new controllers, operating fixtures and cab interiors. Many

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other elements of the original system, including the landing door equipment and gearless machines, were retained and are original to the system.

The lower tower is served by five gearless, traction passenger elevators and one freight elevator. Parts of the elevators were modernized in 2014 with new controllers, operating fixtures and cab interiors; many other elements of the original system, including the landing door equipment and gearless machines, were retained and are original to the system.

Plumbing: The lower tower typically provides two washrooms for women, two washrooms for men and two wheelchair accessible washrooms per floor distributed around each of the building's two main cores. The higher tower typically provides two washrooms for women, one washroom for men and one accessible washroom per floor within the building's core. In both towers the majority of the fixtures were reported to be replaced in approximately 2000 with more water efficient models.

Drinking fountains are in fair to good condition but are nearing the end of their useful service life. The drinking fountain chillers are in fair condition but have reached the end of their useful service life. Additionally, the chillers use R-22 refrigerant for which new supplies are being phased out by government regulations.

The domestic water distribution systems (cold water, hot water, recirculation water) are in fair condition but are nearing the end of their useful service life.

The sanitary system for both buildings consists of sanitary piping, floor drains, auxiliary drains, backflow prevention valves, sump pumps and roof vents. The sanitary piping is original to the building's construction. The sanitary system has reached the end of its useful service life.

The rainwater discharge system for both buildings consists of roof drains, rainwater leaders, sump pumps, underground piping, catch basins and manholes. The rainwater system is original to the building's construction and connects to the city stormwater main.

Gas Distribution: Both buildings are provided with natural gas for humidification equipment (and kitchen equipment in the Data Centre) and a meter is located at the North side. Gas piping is 100 mm (4") in diameter and is distributed through risers from basement to penthouse mechanical rooms. The gas piping system was installed in 2000.

Heating System: The CHCP supplies high temperature heating water (HTHW) at 143°C (290 °F) and 1070 kPa (155 psi) and return is at 60°C (140 °F) and 790 kPa (115 psi). The HTHW serves as the heating source for the medium temperature hot water (MTHW) loop which serves both buildings. The MTHW is produced by heat exchangers located in the basement mechanical room and is distributed separately to each building's perimeter induction units and glycol heating loops. The heat exchangers for the glycol heating loops are located in each building's respective penthouse mechanical rooms and serve the various air handling units (AHU). The majority of the heating distribution piping is also original to the building's construction. There is a total of thirty-five (35) pumps for distribution of hot water to the perimeter induction units, glycol loops and AHU's. The pumps are located in the basement and penthouse mechanical rooms and were replaced in 2001. The perimeter induction unit systems are two pipe changeover systems located below the windows on every floor. These units provide heating during winter and cooling during summer as well as year-round fresh air requirements. They are original to the buildings' construction. Although heat exchangers on the HTHW have been recently replaced with the CHCP upgrades to reduce HTHW supply temperature, they may be oversized and require replacement.

Cooling System: The CHCP supplies chilled water at 5.6 °C (42 °F) and 830 kPa (120 psi) and return is at 10.6°C

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(51 °F) and 690 kPa (100 psi). CHCP chilled water serves as the direct cooling source for both buildings and enters at the basement level before being distributed to AHU's and induction units. The majority of the cooling distribution piping is original to the building's construction. Cooling distribution piping is in fair condition but nearing the end of its useful service life.

Ventilation System: The two towers have cooling and heating AHU's located in both the basement and penthouse mechanical rooms which are original to the building's construction. The penthouse mechanical rooms in which the AHU's are located serve as return plenums and exhaust louvers on the exterior walls serve to evacuate the excess air. Fresh air louvers are directly connected to the AHU's mixing plenums. The units are equipped with heating and cooling coils, humidification systems and centrifugal supply and return fans which are typically external to the units. Most fans have variable speed drives to maintain ductwork pressure of 100% speed as per building automation system (BAS) command. Fresh air intake is controlled with dampers for minimum air requirements or economizer mode. Humidifiers are provided with most of the AHU's and were replaced in 2000. They are in poor operating condition and require frequent maintenance. Basement print room B70-8 of the Headquarter building is provided with temperature and humidity control with a special dehumidifying unit (Dectron unit) which was replaced in 2008.

Exhaust Fans: Exhaust fans are in fair condition but have exceeded their useful service life.

Ducting System: The ductwork systems are in fair condition but have exceeded their useful service life.

Fire Protection: Sprinkler protection in the Headquarters is limited to the basement level. The Headquarters also has a wet standpipe system with hose cabinets near stair shafts on every level, in the basement and on the ground floor. The kitchen has a wet chemical kitchen hood suppression system with three (3) cylinders. Sprinkler system, standpipe system and wet chemical suppression system are original to the building's construction.

Sprinkler protection in the Data Centre is limited to the basement level, ground level and part of the 11th floor. A pre-action sprinkler system serves part of the 9th, 10th and 11th floors. Main sprinkler control valves consist of two (2) 8" valves and one (1) 6" valve. The Data Centre also has a wet standpipe system with hose cabinets near stair shafts on every level, in the basement and on the ground floor. Fire Department (Siamese) connections are located at the southwest corner of the building. Sprinkler system, standpipe system and Siamese connections are original to the building's construction. Two (2) 75 hip vertical fire pumps with controllers and transfer switches (main pump and standby pump) serve the Data Centre sprinkler system. These pumps were changed in 2000. Fire extinguishers are provided throughout the buildings and were replaced in 2007.

The sprinkler systems are in fair condition but have exceeded their useful service life. Additionally, the sprinkler systems will not be code compliant upon major building renovations, alterations or re-capitalization since the NBC requires sprinklers on every floor. The standpipe systems are in fair condition but have exceeded their useful service life.

2.3.4 Electrical Conditions

In general, the electrical system has reached or is approaching the end of its useful service life and is expected to be replaced.

The main incoming electrical 15kV primary high voltage (HV) distribution service for the Taxation Data Center is supplied from the 15kV underground distribution system of the Confederation Heights Central Heating Plant (CHCHP). Line F1 comes directly from the CHCHP and line F2A comes from Sir Leonard Tilley Building. The 15kV primary high voltage distribution enters into the Taxation Data Center via the main electrical room in the basement.

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The main electrical room and UPS rooms are clean and provided with clear access for equipment maintenance. All equipment, including the secondary distribution system, was installed in 1970 and will be at the end of its service life in the next five years.

2.3.5 Fire Alarm System Conditions

The Taxation Data Centre and Headquarters building are provided with a two-stage, Notifier 2020, fire alarm system with integrated voice communication. The fire alarm control panel is located in the security room in the ground floor of the Headquarters building. An annunciator panel is located in the basement management office. The 10th floor is provided with a simplex panel.

The fire alarm system consists of manual pull stations, smoke/heat detectors, speakers, fireperson handset, sprinkler flow switches, sprinkler supervisory switches, duct smoke detectors and bells.

The fire alarm system appeared to be in working order and no major issues were reported; however, the fire alarm system was installed 20 years ago and is past its useful service life. More recently, fire alarm system issues have been raised by operational staff.

PD 3 EXISTING DOCUMENTATION

3.1 Request for Proposal Supporting Documents

An electronic copy of the following documents is provided to all Proponents for reference during the preparation of their RFP responses:

- Feasibility Report Final r03 (Extract of Executive Summary), DFS Architecture & Design, March 2018 (Appendix N)

3.2 Active Studies

The following studies will be provided to the successful Proponent upon completion.

3.2.1 875 Heron Road CRA Functional Program Update

This study includes:

- a. Updated CRA Functional Programs for all Branches that will be occupying 875 Heron after the completion of the Project; and
- b. A swing space strategy and a comparison of the two-stage construction implementation strategy (vacate and renovate towers one at a time) and the one-stage construction implementation strategy (vacate both towers and renovate them simultaneously).

Anticipated completion is Spring 2020.

3.2.2 Building Condition Report 2019

This study includes a review of 875 Heron Road's present condition as an update to the building condition report previously completed in 2014.

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Anticipated completion is Spring 2020.

3.2.3 Drone Study of Building and Site

This study involves an extensive aerial digital photogrammetric coverage of the site. The study will capture the site's features, building roofs, settings, and surrounding landscape, complete with panoramic images (deemed appropriate by the conservation technologist or as directed). The study will involve a survey with the use of a total station in order to capture ground control points to be used as control for the digital aerial photogrammetry of the site. The study will also produce a photogrammetric model of the site, an orthographic site plan and digital elevation model, and involve a procurement of any Project-related required equipment and/or software along with associated calibration, maintenance and licensing.

Anticipated completion is Spring 2020.

3.2.4 Heritage Recording and Documentation Report

This report will provide a photographic report of the as-found heritage character defining elements of 875 Heron Road including the interior context and generic areas complete with photo key plans. The report will not replace the official Heritage Character Statement produced by FHBRO which explain the reasons for the designation and the character-defining elements that should be respected.

Anticipated completion is Spring 2020.

3.2.5 Illustrated Heritage Character Sheets

In consulting the heritage character of the asset, these sheets will consist of approximately eight sheets that will list and illustrate the building's character-defining elements.

Anticipated completion is Spring 2020.

3.2.6 Confederation Heights Master Plan

Public Works and Government Services Canada (PWGSC) is working in partnership with Canada Lands Company (CLC) to prepare a master plan for the federally-owned Confederation Heights site lands. Prepared in close consultation with the National Capital Commission (NCC), the City of Ottawa, and other stakeholders, the Master Plan will include a comprehensive development strategy that defines the principles, objectives and policy direction for the site. Development planning and urban design principles and guidelines will be developed with respect to land use, circulation, built form, open space, heritage, sustainability, and servicing/utilities. Development options will be generated and evaluated, leading to the selection of a preferred option for the future development and phasing of the site. The Master Plan will guide the development of the site into a sustainable, transit-oriented urban mixed-use community and federal employment node over the next 25 years. The planning and design objectives of the Master Plan that will facilitate the development of the land include the following:

- A mix of land uses, including office, retail/service commercial, residential, community recreation, and open space;
- Integration and connectivity between buildings and services to allow for easy and convenient walkability, while encouraging greater use of public transit and cycling for daily transportation;
- A high quality, healthy work environment that supports optimum work productivity;

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- Sustainable development;
 - Universal accessibility;
 - Enhanced interface with surrounding communities; and
 - Flexibility to meet the evolving accommodation requirement of the federal government.

These objectives are to be reached while adhering to the Master Plan's guiding principles, which include the following:

- Creating the workplace of tomorrow with flexible and efficient workplaces;
- Going green through carbon footprint reduction, sustainable sites and buildings, adaptive reuse, and climate change resiliency;
- Promoting active mobility by incorporating active transportation networks and infrastructure, transit-oriented development, walkability, connectivity, accessibility, and human scale built form;
- Promoting a healthy vibrant community with work-life balance, integration, diverse amenities and services, and employee wellness;
- Creating a new sense of place through place-making, inclusiveness, and multi-generational and design excellence;
- Building on past stories by honouring key natural and cultural heritage elements; and
- Engaging Indigenous communities in the master planning process.

There are two major components that define the work to be accomplished: The Confederation Heights Master Plan, and the Confederation Heights Strategic Implementation Phasing Plan.

It is anticipated that the 6 stages of the master plan process outlined below, will lead to an approved master plan by the NCC within 24 months from the engagement of a consulting team to assist PWGSC and CLC in this Project. Further to the approved Master Plan, a Strategic Implementation and Phasing Plan will be prepared with an anticipated completion date of six months. The purpose of the Implementation and Phasing Plan is to develop three distinct phasing options for the site leading to a preferred approach as well as identifying PWGSC's phase one building locations.

The award of the consultant to start the work is scheduled for Spring 2020. The following dates are the stages of the Confederation Heights Master Plan Project Schedule (in months), which are sequential and commence from the award date:

Stage One – Project Review	3
Stage Two – Project Analysis	5
Stage Three – Options Development	9
Stage Four – Draft Master Plan	4
Stage Five – Final Master Plan	3
Stage Six - Strategic Implementation and Phasing Plan	6

The TA shall take the recommended Confederation Heights Master Plan option(s) for 875 Heron into consideration when developing the Project documents. As both projects are occurring in parallel, it is expected that the Confederation Heights Master Plan and 875 Heron Road Rehabilitation Project may influence one another in their respective development. The latest documents of the Master Plan should also be included in the P3 Consortium supporting documents of the electronic data room.

3.3 Other Supporting Documents

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The following documents will be provided to the TA upon Contract award:

1. Feasibility Report Final r03, DFS Architecture & Design, March 2018;
2. FHBRO Heritage Character Statement, Canada Revenue Agency Building, 875 Heron Road, Ottawa, Ontario, July 2017;
3. The Building Condition Assessment Report, Nadine International, November 2014;
4. Federal Heritage Buildings Review Office (FHBRO) Building Report 12-066, FHBRO, 2012;
5. Designate Substance Report (DSR), DST Consulting Engineers, September 6, 2017;
6. Building Envelope Study, MTBA in cooperation with IRC Building Sciences Group, September 6, 2017;
7. Canada Revenue Agency (CRA) – Information Technology Branch (ITB) Functional Program- 99% Submission, DFS Architecture & Design, March 10 2016;
8. Canada Revenue Agency (CRA) – Ontario Region (OR) Functional Program- 100% Submission, DFS architecture & design, March 10 2016;
9. Seismic Analysis Report, HP Engineering, February 2017;
10. Accessibility Audit, ERSKINE DREDGE & Associates Architects Inc., October 27, 2016;
11. Phase 1 Environmental Site Assessment, In AIR Environmental Ltd, August 23rd, 2016;
12. Phase II Environmental Site Assessment, LRL Engineering, December 22, 2017;
13. Elevator Inspection (Data Centre), Rooney, Irving & Associates Ltd., March 2014;
14. Elevating Device Inspection Report (Data Centre), Seaway Elevator Consultants, May 2013;
15. Electrical Maintenance Report – Ottawa Taxation Centre, Siemens, June 2012;
16. The Asbestos Inventory Update, Greenough Environmental Consulting, October 16th 2015;
17. Roof Condition Assessment Report, Fishburn Sheridan & Associates Ltd, Fall 2018;
18. Existing architectural, mechanical, electrical and structural drawings, dates vary;
19. Energy Services Acquisition Program (ESAP) as-built drawings and specifications, (875 Heron systems upgraded as result of ESAP project) dates vary;
20. Public Services and Procurement Canada, National Real Property Services 2016–19 Business Plan: Putting Strategy into Motion, 2016;
21. Building Systems on IP Networks (PSPC Industry Information Gathering Session) (2018); and
22. Confederation Heights Cultural Landscape Assessment (2019).

3.4 Reference Documents:

1. Federal Sustainable Development Strategy (FSDS) (2016-2019): https://www.fsds-sfdd.ca/downloads/Draft_FSDS_2019-2022.pdf;
2. DRAFT Federal Sustainable Development Strategy (FSDS) (2019-2022): https://www.fsds-sfdd.ca/downloads/Draft_FSDS_2019-2022.pdf;
3. TBS Greening Government Strategy (2017): <https://www.canada.ca/en/treasury-board-secretariat/services/innovation/greening-government/strategy.html>;
4. Real Property Sustainability Framework (RPSF) (2015), see Appendix I;
5. Real Property Sustainable Development and Environmental Strategy (RPSDES) (2018), see Appendix J: <https://www.tpsgc-pwgsc.gc.ca/rapports-reports/smdd-dsds/index-eng.html>;
6. PSPC National Carbon Neutral Portfolio Plan (2017): https://buyandsell.gc.ca/cds/public/2018/07/05/0a5d8ab5360ef32e82a6e1f47a8405a4/ABES.PROD.PW_Z.Q.B018.E33604.ATTA001.PDF;

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7. Project GHG Options Analysis Methodology (2017): included in Carbon Neutral Portfolio Plan https://buyandsell.gc.ca/cds/public/2018/07/05/0a5d8ab5360ef32e82a6e1f47a8405a4/ABES.PROD.PW_Z_Q.B018.E33604.ATTA001.PDF;
8. GCworkplace: A modern workplace for the new public service (2018): <https://www.tpsgc-pwgsc.gc.ca/biens-property/mt-wp/mt-wp-eng.html#s2>;
9. Accessibility for Ontarians with Disabilities Act (2005): <https://www.ontario.ca/laws/statute/05a11>;
10. Technical Reference for Office Building Design (2017): http://publications.gc.ca/collections/collection_2017/spac-pspc/P4-70-2017-eng.pdf;
11. Standards and Guidelines for the Conservation of Historic Places in Canada (2010): <https://www.historicplaces.ca/media/18072/81468-parks-s+g-eng-web2.pdf>;
12. Federal Identity Program Manual (2015) <https://www.canada.ca/en/treasury-board-secretariat/services/government-communications/federal-identity-program/manual.html>;
13. TBS Greening Government Strategy: Real Property Guidance (2019): http://www.gcpedia.gc.ca/gcwiki/images/7/75/Guidance_Real_Property_March2019.pdf; and
14. Capital Urban Lands Plan, NCC, (2015): <http://ncc-website-2.s3.amazonaws.com/documents/Capital-Urban-Lands-plan.pdf?mtime=20180822153248>.

PD 4 PROJECT SCOPE

4.1 Project Scope Overview & Objectives

The purpose of the Project is to rehabilitate and modernize the 875 Heron Road Ottawa Taxation Campus Headquarters and Data Centre assets in order to extend its life expectancy, and Government of Canada occupancy for an additional 25 years.

Required work includes upgrades or outright replacements to all major systems and building elements including:

- Building structure;
- Interiors;
- Building Envelope;
- Mechanical and electrical systems;
- Site work; and
- Demolitions as required to facilitate the above.

In addition, the Government of Canada is committed to becoming a leader in climate change resolution and overall sustainability. In response to priorities set out in the Federal Sustainability Development Strategy (FSDS) 2016-2019 and the TBS Greening Government Strategy 2017, PWGSC has recently released its Real Property Sustainable Development and Environmental Strategy (RPSDES) 2018. The Strategy identifies long-term strategic goals that explicitly address sustainability and demonstrates the long-term sustainable future for real property.

As part of the modernization of the asset and given the recent roll-out of enhanced greening initiatives for federal buildings, and in accordance with the goals of Canada's Federal Sustainable Development Strategy, Treasury Board's Greening Government Strategy (TB GGS, 2017), and Real Property's Sustainable Development and Environment Strategy (PSPC RP SDES 2018), the rehabilitation of 875 Heron has been identified as a candidate for demonstrating opportunities for enhanced sustainability performance and investments in clean technologies. The 875 Heron Road Rehabilitation Project will therefore lead by example and head innovative solutions that effectuate real change and reduce carbon dependencies. The Project has been identified by PWGSC as a flagship to achieve a higher benchmark for sustainability, as one that promotes social livability, an improved work environment, and short and long-term

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efficiencies founded in good building science, as well as sound economic life-cycle values. Sustainability is to be integrated as an overarching driver to connect and advance innovative strategies.

As a result, the scope of this Project includes improvements in building performance over and above current minimum standards of LEED Gold sustainability (RPSF, 2015), and sustainability opportunities explored will not be confined or limited to those identified under any specified tool and/or performance level. In addition, resilient and adaptable design will support an understanding of change drivers, strong and weak signals for the development of credible foresight/futurism in the design of 875 Heron Road, inclusive of reducing vulnerability to outside forces/events and future-proofing for localized climate change impacts and anticipated community growth.

The minimum performance objectives for the Project include:

- Compliance with Technical Reference for Office Building Design, 2017;
- Meeting and exceeding where noted, minimum commitments identified in Real Property Sustainability Framework, 2015;
- Alignment with priorities identified in Real Property Sustainable Development and Environmental Strategy, 2018;
- Meeting/certifying to LEED V4 Platinum, or equivalent;
- Reducing the carbon emissions to as close to Carbon Neutral-ready as possible, excluding the use of carbon offsets or renewable energy credits. Provide for clean on-site energy generation to offset the GHG emitted related to the energy consumed by the building. Priority should be given to reducing emissions through improved energy efficiency, followed by the selection of non-emitting energy sources. The production of on-site carbon-free renewable energy generation must be included;
- Achieving an energy performance that exceeds the National Energy Code for Buildings, 2011 baseline building performance by a minimum of 74%;
- Reducing GHG emissions by a minimum of 100% compared to 2005-2006 emissions;
- WELL Certification Silver or higher, or equivalent; and
- Compliance with GCWorkplace Fit-Up Standard.

4.2 Feasibility Report Preliminary Design Features

A feasibility report (FR) was prepared in 2017 to identify the extent of required rehabilitation and Class D costs. The FR builds upon analysis contained in the 2014 Building Condition Report/Asset Management Plan, and evaluated options for the complex under two general scenarios:

1. Rehabilitating the existing building; or
2. Demolishing the existing building and reconstructing a new building of similar size.

The FR confirms the poor condition of the asset but does recommend it is retained and rehabilitated, rather than demolished and rebuilt. This conclusion reflects the overall good condition of base building structures, and the fact that this strategy would be less costly than redevelopment, as well as more environmentally conscious. Retention would also retain heritage elements and the building's prominent placement within Confederation Heights.

The facilities at 875 Heron Road will be redeveloped to meet balanced sustainability performance and heritage conservation requirements in accordance with the FR recommended option "Option 1C – Balanced Sustainability". The project team will explore innovative and contemporary methods to maximize the environmental performance of the existing building while preserving its heritage character.

To achieve this objective, including reductions of GHG and energy consumption, as well as, supporting social livability,

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ecosystem health and restoration, optimal performance for water and waste, occupant health and wellness, and social health and wellness, the FR outlined the following design features. These design features are preliminary and are provided for information purposes only. The TA will be expected to develop its own solutions to meet the aforementioned objectives, which may or may not include the following:

4.2.1 Site

- Introduce shade into parking areas with tree planting in the landscape areas along parking aisles;
- Locate PV arrays on-site to the south of the existing building and to the far east of the site;
- Plant groundcovers and meadows suitable for PV systems as the surfacing under the array;
- Reduce parking areas to reflect a long-term sustainable strategy, which aims to promote active and public transportation methods and minimize individual parking requirements;
- Promote site circulation that emphasizes active mobility, creating complete streets and multi-use pathways (MUPs), in alignment and in coordination with all NCC and City of Ottawa plans;
- Introduce community gardens for building occupants or others to support local food growth;
- Promote passive and active outdoor activity areas of activity and health (i.e. yoga, volleyball, basketball, jogging, walking, birdwatching, etc.);
- Favour planting that supports pollinators;
- Introduce plantings that will enhance summer cooling of the building and site and winter passive solar heat gain for building and site;
- Reforest portions of the existing site to reduce maintenance and support biodiversity. This may be achieved by replanting areas of the site to return it to a more natural state requiring less maintenance and thereby reducing energy consumption and GHG emissions;
- Introduce indigenous planting for new planting that requires no irrigation. This reduces the potable water consumed locally and reduces the energy consumed to purify water at the water treatment facility;
- Improve and introduce new connections to the bicycle path and transit network and to the community in general to encourage the use of alternate modes of transport thereby reducing the use of personal vehicles and the resulting GHG production and traffic in the community. To further enhance these connections, benches are proposed on site for accessibility, spaced appropriate around the site along all pedestrian connections with a minimum of 50% of the benches having shade;
- Facilitate wayfinding by including clear signage as defined by the Federal Identity Program Manual; and
- Increase bike parking to exceed LEED requirements by 10%. This will reduce the use of personal vehicles thereby reducing the energy and GHG footprint of the occupants. Bike parking could be added in the basement, or alternatively, a separate enclosed exterior bike shelter could be considered.

4.2.2 Water, Wastewater & Stormwater

- Reduce energy consumed to produce potable water through the reduction of potable water consumption by 50% for transport of waste by introducing low-flow fixtures combined with rain water collection in a cistern and treatment of grey water on-site;
- Introduce a living machine to treat black water into potable water. Potable water loop feeds building from living machine and the building would draw almost no potable water from off-site. This design feature requires further study by a Civil Engineer;
- Manage stormwater on site through permeable paving and LID techniques for stormwater ponds and bioswales to recharge the local water table, reduce the strain on municipal systems, as well as reduce the financial and environmental cost to the community;

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- Implement a stormwater management strategy and plan that would introduce retention ponds to keep 100% of rain water on site to recharge the local water table, reduce the strain on municipal systems, as well as, reduce the financial and environmental cost to the community;
 - Repave the existing parking areas with low-albedo permeable paving to allow stormwater to recharge the local water table and reduce the heat island effect;
 - Eliminate irrigation with the exception of non-potable water for use in the planting establishment period and in extreme drought conditions. This reduces the potable water consumed locally and reduces the energy consumed to purify water at the treatment facility; and
 - Introduce advanced water metering.

4.2.3 Envelope

- Increase existing building envelope thermal resistance value of the walls to Wall R50. Replace roofing systems (end of service life) with a thermal resistance value of Roof R30. Improve wall composition from the interior to avoid impacting the existing exterior cladding (heritage character defining element) of the building. Existing effective thermal resistance values are estimated at R9.51 (Headquarters) or R16.42 (Data Centre) for walls and R31 for the roofs. It is important to note that effective R-values take into account the effect of thermal bridging of the existing design;
- Replace existing windows with a high performance curtain wall system complete with thermally-broken framing to improve the thermal resistance of the windows. The windows will have low-e double glazing to reduce the amount of heat transfer across the glazing; and
- Improve air tightness with proper sealing of junctions between different systems and materials to prevent air leakage through the envelope to improve the system's thermal resistance.

4.2.4 Lighting

- Replace the existing lighting (end of service life) with LED lighting tied to motion and daylight sensors, dramatically reducing the amount of energy consumed. Reduce the amount of light provided by the fixtures and the energy consumed with dimmable fixtures with daylight sensors. Add controls to limit their light activation when a space is unoccupied further enhances the efficiency of the system; and
- Tie lighting systems metering to Smart building to help building operators understand where energy loads are being used, allowing for better control and offering opportunities for reduction.

4.2.5 Heating, Ventilation and Cooling

- Introduce geothermal heat exchange system to achieve maximum reductions to energy consumption;
- Provide fresh air to the systems by a dedicated fresh air treatment system, which will be equipped with an Energy Recovery System (heat bank) to recover heat from the exhaust air (85%). The general and sanitary exhausts will need to be centralized and combined for this purpose;
- Introduce energy recovery with chillers are necessary to achieve the required energy savings. A facility heat recovery plant has been proposed and will be composed of heat recovery chillers, dry coolers, heat pumps, hot and cold gradient tanks and geothermal wells. The plant will reduce reliance on the CHCP and maximize energy recovery within the facility; \
- Recover heat using fan coils from equipment rooms;
- Reduce energy consumption related to air transportation throughout the building by introducing low-velocity ventilation systems;
- Provide carbon dioxide sensors to ensure an optimal level of indoor air quality is provided to the building occupants;

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- Provide economizer mode on dampers to control fresh air intake;
 - Provide reduction in energy consumption using more efficient motors;
 - Provide an induction system with VAV for central zones;
 - Introduce hot and chilled water networks with variable flow using variable speed pumps and two-way valves. Low velocity piping for improved distribution energy efficiency;
 - Provide variable speed fans as an opportunity to reduce energy consumption when demand is less; and
 - Retain existing overhangs and side fins to offer solar shading during the summer to reduce cooling loads and associated energy consumption.

4.2.7 Materials

- Promote natural materials over synthetic;
- Promote phase-change material to act as thermal mass, storing and radiating energy;
- Require a minimum of 90% of the Project construction waste be diverted from the landfill as part of the construction waste management plan;
- Use low VOC, high recycled content, locally manufactured products as part of the Project; and
- Inform and reduce the life-cycle environmental impacts from design/material choices, functional and operational uses through the use of Life Cycle Assessments and environmental product declarations to exceed industry norm by 20%.

4.2.8 Indoor Environmental Quality

- Provide humidification using living walls;
- Introduce nature themes and planting in the building using biophilic design, which can be achieved by providing natural light, views to the exterior/nature, adding plants, introducing natural materials, providing images of nature and water features;
- Reduce, eliminate, or prevent pollution at the construction site and the building when completed as part of the pollution control plan; and
- Remove or reduce pollutants (VOCs and other particulate matter) within the building by air flushing & testing at the end of construction, and prior to occupancy. Air flushing forces air through a building to improve indoor air quality for building occupants.

4.2.9 Health and Wellness

- Provide elevator controls limited to every second floor, requiring the occupants to use the stairs;
- Promote the use of stairs by making them more inviting to use;
- Meet or exceed accessibility standards;
- Introduce kinetic art to illustrate the environmental performance of the building in an effort to engage the building occupants to be sensitive and conscious of their energy use, as well as, their health and wellness;
- Conduct tenant engagement / satisfaction surveys to determine if there are any issues with occupant comfort and to address issues to improve occupant health and wellness; and
- Integrate health and wellness design strategies to enhance social livability and create highly productive, healthy and comfortable environments within indoor and outdoor spaces that encourage social interaction, active living and nurture the human/nature connection.

4.2.10 Energy

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- Recover lost energy using regenerative elevator motors and allowing the motor to essentially act as a generator during periods of low load;
 - Introduce energy creating stairs. Kinetic energy recovery systems have been developed to generate energy when stepped on;
 - Enhance zoning to allow different operating times for specific zones (i.e. call centre);
 - Introduce sensors to shut off systems in unoccupied areas/workstations; and
 - Feedback software to notify occupants of systems running at their vacant workstation offering to shut them down.

4.2.11 Commissioning

- Enhanced commissioning of systems and envelope by an independent commissioning agent is the process of verifying near the end of construction that all subsystems for mechanical (HVAC), plumbing, electrical, fire/life safety, building envelopes, interior systems, sustainable systems, lighting, wastewater, controls, etc. are functions as designed.

4.2.12 Workspace

- Incorporate GC Workplace Fit-Up Standards design into workspace. The final solution for workspace is expected to result in space utilization (space per full-time equivalent) that exceeds the GC Workplace Fit-Up Standards. The PWGSC Technical Reference for Office Building Design Standard outlines all federal, codes, standards and best practices expected for this project. Its application is fundamental to ensuring an outcome that is in alignment with PSPC Real Property's mandated role, responsibility and commitments as a custodian and steward of federal office building assets; and
- Improve comfort and user experience of occupants in a responsive, intelligent, and flexible environment through SMART building, user-centric technologies that drives connectivity and productivity, enhancing space utilization and occupant engagement in addition to operational efficiency.

PD 5 OPTIONAL PROJECT SCOPE

PWGSC has obtained approval to deliver the Project as a DBF, but there is indication from preliminary analysis that a Design-Build-Finance-Maintain (DBFM) may generate greater Value-for-Money. PWGSC is therefore considering the inclusion of long-term financing and Facilities Management in the Project Scope, subject to obtaining necessary approvals, as well as a more in-depth Value-for-Money analysis by the Financial Advisor based on refined cost estimates and other qualitative considerations generated by the TA.

Inclusion of these optional Scope elements would necessitate additional services from the TA, which are described in more detail in section OS 1-6.

PD 6 CONSTRUCTION IMPLEMENTATION STRATEGY

The Project approval received for the Project was based on vacating and renovating one tower at a time (referred to as the 'two-stage construction implementation strategy') as a result of the limited availability of existing swing spaces to accommodate all occupants of 875 Heron Road. The Schematic Design, the Class C estimate and estimated schedule should reflect this strategy.

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However, a market-sounding study conducted in March 2019 by Ernst and Young, it is recognized that a construction implementation strategy where both towers are vacated and rehabilitated simultaneously (referred to as the 'one-stage construction implementation strategy') may result in significant Project schedule and budget benefit to the Crown. As such, the TA shall also examine this strategy and prepare a second Class C estimate and schedule reflective of the one-stage construction implementation strategy. The Class C estimates for both scenarios should take into consideration, at a minimum:

- a. The economy of scale of implementing the work in a one-stage construction implementation strategy;
- b. The required level of effort for the separation of the construction zone from the occupied areas in the two-stage construction implementation strategy;
- c. The cost of leased spaces;
- d. The cost of annual inflation as it relates to construction;
- e. Possible limitations/required staging of construction activities; and
- f. Soft costs for each strategy.

The TA shall provide a technical recommendation on which construction implementation strategy should be implemented based on the comparison of estimated budget and schedule but also taking into consideration the following aspects:

- a. Impact on CRA operations;
- b. The possible health and safety exposure to building occupants in the two-stage construction implementation strategy;
- c. Benefits of each strategy to the P3 Consortium.

The recommendation and cost estimates will be provided to the FA, who will in turn conduct a Value-for-Money (VfM) analysis as part of the Procurement Options Analysis. The completed Procurement Options Analysis will allow PWGSC to seek an amended project and expenditure approval. Following the amended approval, all documentation, drawings, specifications, supporting background information, etc. produced by the TA shall reflect the approved construction implementation strategy.

PD 7 PROJECT CHALLENGES

7.1 Accuracy of Cost Estimates

Effective cost estimating is of prime importance and shall be provided by a professional cost estimator – a professional who, by training and experience, provides expert advice on construction costs as well as Facility Management and maintenance – who is to be a member of the TA Team.

The cost estimates shall be produced in elemental cost analysis format. The standard of acceptance for this format is the current issue of the elemental cost analysis format issued by the Canadian Institute of Quantity Surveyors and the estimates will be developed in accordance with the PPP Canada's Schematic Design Estimate Guide (SDEG), see Appendix H.

7.2 Federal Heritage Buildings Review Office (FHBRO) and National Capital Commission (NCC) Approvals

The Schematic Design of 875 Heron Road will require coordination and approval with both the Federal Heritage Buildings Review Office (FHBRO) and the National Capital Commission (NCC). This lengthy process, approximately 130 business days from beginning to end, requires several submissions, letters, presentations and committee approvals. PWGSC has initiated dialogue with both these agencies in advance of this RFP. The TA will provide

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support to PWGSC to obtain these approvals.

In order to initiate the FHBRO/NCC process, the first iteration of Schematic Design must be provided as part of the submission. At the end of the process, the signed approval letter with conditions must be incorporated into the final iteration of Schematic Design. To maintain the Project schedule in section PD 1.2, the TA will be challenged to complete the first iteration of Schematic Design and provide Class C estimates within 120 business days of award.

7.3 Heritage and Sustainability Balance

In accordance with the goals of Canada's Federal Sustainable Development Strategy, Treasury Board's Greening Government Strategy (TB GGS, 2017), and Real Property's Sustainable Development and Environment Strategy (PSPC RP SDES 2018), the rehabilitation of the Facility was identified as a key opportunity to implement enhanced sustainability performance and investments in clean technologies. Given that the 875 Heron Rehabilitation Project also involves the rehabilitation of a 'Recognized' Federal Heritage Building, a balance between heritage and sustainability will drive design decisions in this Project. For alterations, changes of use, or other interventions to 'Recognized' Federal Heritage Buildings that could affect heritage character, appropriate conservation advice is required. This advice is to be obtained from conservation experts and sustainability experts for proper sustainable integration.

7.4 Designated Substances

The Facility contains significant presence of asbestos and other designated substances. The removal of asbestos and other designated substances is a significant and important element of the Project design, demolition and construction while the building continues to be occupied if a two-stage construction implementation strategy remains as the approved construction implementations strategy. Additional considerations will need to be designed to ensure safety of the occupants.

7.5 Confederation Heights Master Plan

The Confederation Heights Master Plan and the Project will be running as parallel projects. Elements of each project may influence the other. The TA should take into consideration the Master Plan recommended option for the development of the 875 Heron Schematic Design and PSOS.

7.6 Maintenance Option, Construction Implementation Strategy and Project/Expenditure Approval Amendment

As described in sections PD 5 and PD 6, the Project approval received for the 875 Heron Road Rehabilitation Project was based on vacating and renovating one tower at a time (referred to as the 'two-stage construction implementation strategy') as a result of the limited availability of existing swing spaces to accommodate all the occupants of 875 Heron Road. Following a market-sounding conducted in March 2019 by Ernst and Young, it is recognized that a construction strategy where both towers are vacated and rehabilitated simultaneously (referred to as the 'one-stage construction implementation strategy') may result in significant Project schedule and budget benefits to the Crown. Further, as described in SI1, the same market-sounding identified a DBFM model would yield better Value-for-Money (VfM) to the Crown.

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In order for the Financial Advisor to complete a full VfM analysis, the first iteration of Schematic Design, class C estimates and schedule must be complete for both the two-stage construction implementation strategy and one-stage construction implementation strategy. The TA will be challenged to complete the first iteration of Schematic Design within 120 business days of award. The one-stage construction implementation strategy, Phase III, Phase IV, and maintenance option cannot be exercised until Project and Expenditure amendment approval is received.

REQUIRED SERVICES

RS GA GENERAL AND ADMINISTRATIVE

The TA Team will work interactively with PWGSC's internal and external consultants and stakeholders, including representatives of the CRA, to facilitate the delivery of this 875 Heron Road Rehabilitation Project through the approved P3 delivery model.

The TA is responsible for the delivery of the following services:

1. Coordinate and be responsible for Work or services throughout the duration of the Contract;
2. Employ Project Management Institute principles for, but not limited to: integration management, scope management, schedule management, cost management, quality management, resource management, communications management, risk management, procurement management, stakeholder management, claims management, health/safety/security/environmental management, and financial management throughout the Contract period;
3. Maintain full and open communication among the members of the TA Team throughout the life of the Contract. Ensure clear, accurate and ongoing communication with PWGSC as it relates to the responsibilities of the TA Team in fulfilling Required Services. Ensure the TA Team effectively shares information and works in the spirit of collaboration with the PWGSC Departmental Representative, other PWGSC representatives, CRA representatives and other stakeholders and parties engaged by Canada;
4. Apply a continual risk management program in the delivery of services throughout the Contract period. The TA is required to support the PWGSC Departmental Representative in identifying risks throughout the Project life cycle, and to develop and manage the risk management process/plan as per the requirements of the Federal National Project Management System described at: <https://www.tpsqc-PWGSC.gc.ca/biens-property/sngp-npms/bi-rp/conn-know/risque-risk/index-eng.html>;

Maintain, organize and store information on a sharing server, provided by PWGSC, such that internal and external Project stakeholder members will have access to via any network. Manage permission settings to share with external parties. The sharing server will allow for collaborative editing of the PSOS.

The TA is expected to provide the resources and office accommodations space necessary to support the TA Team and, as necessary on occasion, other stakeholders for which the TA Team must engage with to deliver the Required Services as described in this Project Brief. The intent is to foster a collaborative and cohesive working environment.

GA.1 Project Phasing

The Work is expected to be generally structured into four phases:

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Phase I - Pre-Procurement

Phase II - P3 Consortium Procurement

Phase III - Design & Construction

Phase IV - Post-Construction

The TA Team's Required Services and the timing of deliverables will be determined in conjunction with PWGSC's team. A description of the anticipated scope, deliverables and services for each phase is available in sections RS and OS.

GA.2 PWGSC Governance

Project governance arrangements will be put in place to support the delivery of the Project. Senior review committees will be established at the Assistant Deputy Minister, Director General and Director levels. The governance will be maintained to leverage expertise, knowledge and mandate governmental stakeholders to ensure success of the Work and the Project. The established governance ensures a clear chain of command, timely decision and efficient coordination. The TA will be required to provide support where necessary to facilitate the preparation of supporting material, or on occasion, attend presentations as either an observer or co-presenter.

GA.3 Integrated Project Management Team Communication

The PWGSC Departmental Representative, and designated PWGSC representatives, will act as liaison between the TA, government representatives and other third parties as required. PWGSC will be engaging a Financial Advisor, Fairness Monitor and other third parties to deliver the Project. Justice Canada will also provide legal support. The TA Team will be required to communicate with other internal/external stakeholders which will primarily be done in conjunction with the PWGSC's Departmental Representative.

GA.4 Communication with the Media and the Public

The members of the TA Team will be required to sign a non-disclosure agreement. The TA shall not respond to requests for Project-related information or questions from the media. Such inquiries are to be directed to the PWGSC Departmental Representative. The TA shall not communicate any information on the Project with any individual of the public that is not a member of PWGSC, the TA Team or any individual that has not signed a non-disclosure agreement in relation to the Project.

GA.5 Service Response Time

It is a requirement that the TA Team be available to respond to inquiries as soon as possible and no later than within two (2) business days.

GA.6 Meetings

The TA is expected to work interactively with PWGSC and its internal and external advisors. The TA is expected to attend and/or lead bi-weekly meetings as required to assist PWGSC in the pre-procurement, procurement, design

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and construction and post-construction of the Project. Such meetings may include amongst others:

1. Planning and design meetings;
2. Information sessions for stakeholders;
3. Internal and external stakeholder engagement sessions;
4. Proponent meetings;
5. Proponent design feedback meetings;
6. Commercially confidential meetings;
7. Proponent evaluation meetings;
8. Project meetings;
9. Design compliance meetings; and
10. Commissioning, completion and occupancy meetings.

The TA will be expected to record and distribute, within two business days, the minutes of all meetings. Meetings will be held within the National Capital Region.

The typical frequency of Project meetings is anticipated to be bi-weekly; however, meetings should be held in accordance with approved Project schedules to deliver the Required Services. Meetings should occur between 9am and 5pm Eastern Standard Time. It is a requirement that the Key Personnel and other required personnel be available to attend meetings in person within the National Capital Region, as required or as requested by the PWGSC Departmental Representative. The use of conference calls will be addressed on a case-by-case basis as authorized by the PWGSC Departmental Representative.

GA.7 Administrative Services

The TA will provide administrative services to support the TA activities. It is the responsibility of the TA to monitor the performance of the administrative services.

GA.8 Deliverables

The TA will be required to maintain electronic copies of all draft and final Works and deliverables and native files on the sharing server. The PWGSC Departmental Representative may request, where reasonable, additional hard copies of final deliverables, printed and assembled by the TA, as required, at no additional cost to PWGSC. Deliverables and submissions may include, but are not limited to, specifications, reports, summaries, drawings, studies, plans, tests, simulations, design works. The TA must ensure that documents, including drawings and specifications, comply with the requirements set out in the most recent PWGSC standards included in Appendix D. All produced Works will become property of Canada for future use by Canada.

GA.9 TA Team Functions and Expertise

The TA Team for this Project should have experience working as a team member of a Public-Private Partnership

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and should possess the qualifications, experience and capability to provide the Required Services and Optional Services. PWGSC anticipates that the following functions and expertise, at a minimum, will be necessary to effectively deliver the Project:

Administrative services, archeological services, architecture, art, audio-visual, civil engineering, commissioning, cost control, cost estimation services, designated substances, ecology, electrical engineering, energy modeling, environmental engineering, environmental psychology, Facility Management, futurology, geo-environmental services, geotechnical engineering, geothermal engineering, health and safety, heritage and conservation, interior design, IP networking, landscape architect, LEED certification, lighting design, mechanical engineering, noise and vibration, P3 procurement, project controls, project management, quality assurance and control, risk management, security, smart building technology, stakeholder engagement, stormwater management, structural engineering, sustainability, systems/IT integration, traffic engineering, urban design, urban planning, utilities engineering, wayfinding/signage, and WELL certification.

The Proponent should ensure sufficient resources are assigned to the Project to perform the Required Services and Optional Services. The TA will be required to provide the expertise of the TA Team as necessary for the duration of the contract.

RS 1 PHASE I – PRE-PROCUREMENT

1.1 Overview

In Phase I, the TA Team is expected to collaborate with PWGSC and its internal and external stakeholders in order to:

1. Collect and review existing Project documentation;
2. Conduct technical studies;
3. Develop Schematic Design and Class C cost estimates;
4. Support the development of the Procurement Options Analysis (POA) conducted by the Financial Advisor;
5. Coordinate National Capital Commission and Federal Heritage Building Review Office approvals; and
6. Develop Project Specific Output Specifications and other Project Agreement schedules.

Timelines for the provision of one or more of the deliverables identified above may extend into Phase 2.

1.2 Collect and Review Existing Project Documentation

The TA Team will review all existing information and studies completed on the Project. For a list of existing Project documentation, refer to section PD 3, inclusive of a list of studies currently being conducted by PWGSC.

1.3 Conduct Technical Investigations

The TA Team will make recommendations of additional studies required to decrease PWGSC's risk exposure. Additional recommended studies should be used to enhance the Project Agreement schedules in the P3 Consortium RFP. If PWGSC agrees that additional studies are required, the TA will perform the studies.

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The TA will be responsible for completing the following studies, at a minimum, in order to support the development of the Schematic Design, PSOS and PA schedules of the P3 Consortium RFP.

1.3.1 875 Heron Road CRA Functional Program Update

PWGSC has commissioned an update to the existing CRA functional program, which will be made available to the TA upon award of contract. To the extent needed to supplement the information provided in the Functional Program Report, the TA shall initiate and lead consultation meetings with PWGSC's group of functional experts and CRA representatives to ensure the TA has a full understanding of the functional requirements.

1.3.2 Tree and Invasive Species Inventory

The tree inventory study will consist of recording species, size, and condition of trees on the site, evaluating the impact of proposed construction and providing information and specifications to assist with tree preservation.

The invasive species inventory study will determine which (if any) invasive species are present on the site. The study will list the species, risk category, and any possible mitigation measures to limit the adverse effects of the species on surrounding native growth.

1.3.3 Species at Risk Study

The species at risk study will consist of determining which endangered species currently use or contain habitats on the land and creating recovery and management plans to protect such species. This study will conform to the Ontario Ministry of the Environment Environmental Site Assessment requirements pertaining to areas of natural significance that may include endangered species.

1.3.4 Site Circulation Study

The site circulation study will examine the functional and operational viability of the existing exterior circulation systems that support the building and site. Site specific considerations include: access to transit stations, universal accessibility, road/pathway networks, complete streets, active transportation routes and supportive infrastructure, connectivity within the site and with adjacent sites/buildings and surrounding urban fabric, wayfinding/orientation (including regulatory, directional, and information signs), pick-up/drop-off points, traffic impact, and transportation demand management strategies to manage multi-modal transportation.

Specific considerations will be given to the following modes:

- Pedestrians: walking distances/times to destination points (including public transit stations), pedestrian infrastructure (i.e. pathways (including desire paths), crossings, sidewalks), safety;
- Cyclists: bicycle access/egress, access to public transit stations, cyclist infrastructure (i.e. crossings, bike lanes), safety, storage areas;
- Public vehicles: routes, networks, shipping/receiving areas, infrastructure (i.e. transit stations), site lines; and

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- Private vehicles: road network, parking facilities.

Aspects that clearly need to be shown are ones that facilitate a safe, healthy and secure environment whereby circulation requirements, including vehicular parking and drop-off areas, are met for the following:

- 1) Employees
- 2) Visitors / General Public
- 3) Service Delivery
- 4) Emergency – fire, ambulance
- 5) Security
- 6) Public Transit
- 7) Waste Management
- 8) Snow Ploughs;
- 9) Material Handling
- 10) Construction

Pedestrian traffic systems including having safe universally accessible crossings, drop off /waiting zones and bus stops for the following:

- 1) Employees
- 2) Visitors /General Public
- 3) Operations
- 4) Security personnel

The objective is to integrate and balance all areas of the site holistically to maintain a fully functioning, operating site that fits within the urban fabric of the surrounding neighbourhood, the streetscapes and the site itself. The design of the circulation for the site must be in alignment and in coordination with existing NCC and City of Ottawa plans. It is to meet all of PWGSC codes, standards and best practices. Areas that must be considered at a minimum are:

- 1) Operations
- 2) Sustainability (Social, Economic and Environmental)
- 3) Transportation Demand Management
- 4) Active mobility
- 5) Health, Safety and Security
- 6) Universal Accessibility
- 7) Wayfinding and Orientation
- 8) Sightlines
- 9) Destination Points
- 10) Pick-up / Drop-off Points
- 11) Sense of Place / Experience
- 12) Aesthetics

This study will allow for a greater understanding of the site's current circulation conditions and user experience to produce recommendations for the site that can better support the functional, operational, health, and safety needs

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for all users. The study will assist in the development of the Schematic Design and Project Agreement ensuring that transportation demand management is achieved.

1.3.5 Geothermal Investigation

A geothermal study will determine the feasibility of geothermal energy production for the Project. The study will also review the different types of geo-exchange system that could be used, such as closed loop (horizontal, vertical and pond/lake) or open loop. As part of the study, the TA will review the site conditions and determine the location and depth of the systems. Based on the energy demand of the building, the TA will demonstrate that the systems can handle peak loads and determine the economic viability of three preferred options.

1.3.7 Preliminary Sustainable Development Strategy Outline

The preliminary sustainable development strategy outline will confirm sustainability priorities, objectives, and required credits, and additional performance targets for the PSOS based on the other support studies, and alignment with Government of Canada priorities and objectives. Government of Canada sustainability policies should be referenced to contextualize strategies and align Project requirements with Government of Canada priorities overall. This includes the Federal Sustainability Development Strategy (FSDS) 2016-2019 (and updated 2019-2022 version), Real Property Sustainable Development and Environmental Strategy (RP SDES, 2018); and the Treasury Board Greening Government Strategy (TB GGS, 2017), and its corresponding Real Property Guidance (TB GGS RPG, 2019). This will assist in identifying feasible sustainable design opportunities and strategies, which will align with the Project's sustainability objectives as well as the latest Government of Canada policies.

The preliminary sustainable development strategy outline should not be limited by or to credits/measures identified in the chosen rating tool(s). These performance assessment and rating tools are guides to verify an industry recognized level of performance, but it should not define the sustainable design. The TA must balance the requirements of said rating systems with other sustainability objectives to ensure pragmatic recommendations supportive of a sustainable strategy best suited for this Project and site.

Sustainability is to be integrated as an overarching driver to connect and advance innovative strategies at both the building and site scale. The strategies will enable applicable Departmental and Government-wide FSDS commitments to be met or exceeded. The outline must demonstrate a realistic, timely and life-cycle approach, integrating best practices that support innovative sustainable and low carbon solutions for smarter, healthier and more productive workplaces; and adaptive, restorative, and regenerative design solutions that will improve and enhance ecological integrity, while supporting mutually beneficial relationships between human and natural systems.

1.3.8 Subsurface Utility Engineering, Utility Capacity Study & Power-Load Investigation

The TA will be required to conduct a SUE investigation to Quality Level B as per ASCE 38-02.

The TA must confirm that the capacity of the existing water supply is sufficient to supply the site, as per the requirements of the Schematic Design. The TA must also confirm the capacity to outlet to sanitary and storm sewer municipally-owned infrastructure in consultation with the City of Ottawa. The TA shall analyze the availability and capacity of utilities including hydro, natural gas, communications (fiber-optic) and any other required services, as per the requirements of the Schematic Design. The TA will develop a site servicing plan as part of the study.

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With respect to power, the TA must estimate the required load calculations for the rehabilitated building. They will have to outline options for connectivity from the rehabilitated building via ducts to Hydro One's exterior vault. If there is insufficient capacity in the existing primary transformers, the TA will have to seek Hydro One's or Hydro Ottawa's approval, as applicable, to integrate new high voltage concept designs in their recommended options.

1.3.9 Site Development Guidance Document

The TA shall also prepare a Site Development Guidance Document for the use of the P3 RFP that outlines the recommendations, existing site data and completed studies, as well as the City of Ottawa's procedure and timelines to apply and obtain a Development Permit, including approximate costs. The Guidance Document shall also provide an outline of each municipal or private utility provider's contacts, procedures, and timelines for requesting utility service to the site and utility relocation requests, including approximate costs.

1.4 Schematic Design and Class C Cost Estimates

The TA shall develop Schematic Designs as per the requirements of sections PD 1 – 7.

The Schematic Design is intended to be the primary input to the development of the PSOS and obtaining NCC/FHBRO approvals.

The Schematic Design drawings should include, but not limited to:

- a. Proposed Floor plans;
- b. Decommissioning Plans;
- c. Sections;
- d. Elevations;
- e. Structural plans, sections and details;
- f. Electrical plans including equipment locations, sizes, single line diagrams and lighting layouts;
- g. Mechanical floor plans, including equipment layouts, sizing and routing of feeds and associated shafts and risers;
- h. Details of the proposed upgrades/modifications to the building envelope;
- i. Conservation and re-incorporation of heritage character defining elements;
- j. Construction zoning and isolation plans related to Designated Substances and CRA occupied/operated spaces in a two-stage construction implementation strategy;
- k. Site plans inclusive of parking, connectivity, landscaping, exterior lighting, sustainability features, security zoning, utilities, and land area for future expansion. Layout plans should be provided with cross sections and elevations;
- l. Furniture layouts; and
- m. Interior and exterior 3D renderings.

The Schematic Design produced by the TA Team should be developed to a 30% level of design to enable a Class C cost estimate. The first iteration of Schematic Design and Class C estimates are to be prepared and submitted within 120 business days of Contract award.

In preparing the Schematic Design, the TA Team is required to make assumptions, based on its professional design expertise and its knowledge of industry best practices, on the types of building systems appropriate to the Facility including the impact of architectural, structural, mechanical and electrical components on the program layout (e.g. electrical rooms, IT hub rooms, FM spaces). The TA Team may be required to produce enhanced schematic drawings

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of certain limited building areas where specialized layout, furnishings, fixtures or equipment, adjacencies, components or finishes may be critical to CRA and need to be illustrated to the P3 Consortium Proponents.

The Schematic Design should expand on the Functional Program Report to achieve the following:

- a. Identify operational assumptions, and planning and design principles (such as component organization, a proximity matrix, circulation systems, and security);
- b. Illustrate functional and spatial relationships;
- c. Enable the building and site program to be tested to ensure that the program with all its intended spatial and programming relationships can be physically achieved;
- d. Provide a sufficient level of detail for exterior elevations to inform stakeholder groups concerned with the external appearance and interface impacts of the future Facility;
- e. Demonstrate that a massing concept can function within the gross facility area allowance; and
- f. Serve as the initial step towards the production of the design and Facilities Management Output Specifications (FMOS), and allow design impacts on the building and site program to be uncovered in the block diagram stage prior to approval of the recommended program.

The TA will prepare a Schematic Design for the Facility to develop, test and refine the PSOS. The Schematic Design is expected to consist of partial schematic documents including a layout plan incorporating scaled and colour-coded diagrams to identify and differentiate all program areas, roadways, parking, loading dock, primary circulation patterns, service spaces, entrances and exits, and other defining elements as required. Plans should include a layout of each floor plate showing each discrete functional space and building elevations to illustrate theoretical massing. Narratives should be included to explain the blocking and massing concepts and assumptions. The text and diagrams together should permit a full understanding of the schemes.

The TA will also be required to prepare 2D and 3D renders, graphics, fly-through videos and other promotional materials of Facility's interior and exterior, showcasing the beautification and enhanced functionality of the rehabilitated spaces, sustainability features and exterior landscape.

The TA Team will allow for a minimum of 2-week review and input by PWGSC on all draft documents and revision to satisfy those reviews at each stage.

With regards to the Class C estimate, the TA will be required to:

- a. Review the design parameters and the initial functional space program and provide design and specification information to permit the development of a refined cost estimate (including capital, maintenance and lifecycle components) for the Facility by a cost estimator;
- b. Ensure the level of classification required for the capital cost estimate will be Class C (approximately -15% to +20% and based on Schematic Design);
- c. If the estimate exceeds the PWGSC budget, the TA may be required to make adjustments to the specifications and functional space program, in consultation with PWGSC, to reduce the estimated cost to within PWGSC's budget.

The TA must also be familiar with the costing information available and/or required for financial planning as well as to be able to develop and provide such information if requested. Financial plans are typically presented as a "pro forma" for all-inclusive Project costs which typically include:

- a. Hard Project costs (construction and land costs);
- b. Soft Project costs (such as professional fees, realtor fees);
- c. Market revenue analysis;
- d. Facility management fees;

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- e. Lifecycle costs;
- f. Contingencies and risk allowances;
- g. Escalations; and
- h. Applicable taxes and other fees.

The TA will provide cost estimates as requested for recommended content input for decision documents for Treasury Board Submissions, Memorandums to Cabinet, Procurement Options Analysis and Business Cases, and other various purposes.

1.5 Financial Advisor Procurement Options Analysis Support

The TA Team will support PWGSC during the development of the Procurement Option Analysis by providing professional opinions on various risks (e.g., environmental, design development, site conditions). The TA Team will provide input to the risk matrix and participate in the risk and efficiencies workshops to be organized by PWGSC. This includes Project elements and risks related to Facility Management.

Financial plans are to provide all-inclusive, broken-down Project costs free of embedded contingencies with cash flows based on the recommended planned schedule. The TA will be required to work with the Financial Advisor that will be hired by PWGSC to develop the complete financial analysis.

1.6 National Capital Commission and Federal Heritage Building Review Office Project Approvals

It is expected that the Project will require approval from the NCC as well as from FHBRO at various stages of the Project. The TA is to support the PWGSC Department Representative at these stages.

The Schematic Design will require coordination with both the Federal Heritage Buildings Review Office (FHBRO) and the National Capital Commission (NCC). PWGSC has developed a roadmap of the process, which is estimated to take approximately 130 business days from beginning to end and requires several submissions, letters, presentations and committee approvals. PWGSC has initiated dialogue with both of these agencies in advance of this RFP. The TA will provide support to PWGSC to obtain these approvals. In order to initiate the FHBRO/NCC process, the first iteration of Schematic Design must be provided as part of the submission. At the end of the process, the signed approval letter with conditions must be incorporated into the Project Specific Output Specifications and Project Agreement schedules. To maintain the Project schedule in section PD 1.2, the TA will be required to complete the first iteration of Schematic Design within 120 business days of award.

1.7 Project Specific Output Specifications and Other Project Agreement Schedules

The TA's scope includes developing and producing the Project Specific Output Specifications for inclusion in the P3 Consortium RFP and Project Agreement.

The technical requirements governing the design, construction and Facility Management of the Facility will be set out in the Project Specific Output Specifications. Through its compliance with the Project Specific Output Specifications prepared by the TA, the P3 Consortium will be able to design and construct a Facility that meets PWGSC's needs and objectives with respect to such Facility, including the expectations for functionality, serviceability, reliability and durability established by PWGSC. The Project Specific Output Specifications will be used as a point of reference to

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evaluate the designs and technical submissions submitted by the P3 Consortium Proponents, and the PSOS will be included as a schedule to the Project Agreement.

The Project Specific Output Specifications will allow for lifecycle cost analysis of all major building components and engineered building services.

The TA will be required to prepare the Design Performance Specifications portion of the Project Specific Output Specifications. The Design Performance Specifications should define performance levels for all building systems and components that are consistent with the final building and site program's specific requirements and support services, including, but not limited to:

- Site – including roads, pathways, parking, lighting, drainage, landscaping, fencing, etc.;
- Building rooms and components including: loading dock, reception / public access area, offices, support rooms, security and information technology rooms;
- Washrooms and locker rooms, meeting rooms, lunchrooms;
- Physical attributes within spaces;
- All required dimensions within the planned space;
- The physical quality, functionality, capacity, material, durability, serviceability, lifespan, and sustainability requirements of the spaces and contained or contributing components;
- Stormwater;
- Architectural walls, ceilings, floors, doors, glazing, hardware and acoustic control;
- Building envelope;
- Structural capacity and serviceability;
- Ventilation, heating, cooling, humidification, filtering, pressurization, contaminants control, plumbing, controls, including special consideration for the preservation of archival materials;
- Power distribution and quality, lighting, life safety, data, communication and security systems, controls;
- Furniture, equipment, millwork and casework;
- Space templates and space data sheets;
- Sustainable building systems and design; and
- Applicable codes, standards, and guidelines.

The Design Performance Specifications should be consistent with all applicable building codes, standards, guidelines, regulations and other reference documentation as determined by authorities having jurisdiction.

The TA Team will be expected to ensure that Design Performance Specifications maintain and enhance the opportunities for flexibility and adaptability within each component, and allow for current and future best practices for service delivery.

1.8 Stakeholder Engagement

The TA Team's scope includes assisting in or leading user groups and stakeholder consultations in conjunction with PWGSC, to support the subsequent development of Project Specific Output Specifications and the development approvals process.

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The scope of work includes working closely with PWGSC to schedule, organize and conduct user group and key stakeholder sessions to ensure that requirements are addressed in the Schematic Design, Project Specific Output Specifications and Project Agreement. The TA Team will be expected to incorporate and respond on behalf of PWGSC to feedback generated by engagement activities.

Stakeholder and user groups that will need to be engaged may include, but are not limited to: PWGSC subject matter experts (e.g. real property, security), CRA, Justice Canada, City of Ottawa, Hydro One/Hydro Ottawa (further investigation is required to determine which organization services the site), National Capital Commission, FHBRO and Bell. The user group and stakeholder consultations are intended to ensure an understanding of user and stakeholder functional, operational and design requirements for the Facility.

The TA will be required to participate in information and stakeholder engagement sessions with the general public. This could include participating in open-houses and other events to communicate information on the Project.

1.9 Schedule Management

The TA will be required to create and maintain a detailed project master schedule in MS Project that includes all Project activities and milestones. The TA will be expected to advise PWGSC on schedule issues, events, activities or decisions that could impact the Project's critical path or schedule as soon as they occur. The schedule is to be updated at minimum at the end of every month and distributed to PWGSC in the first week of the new month. The TA is to highlight any major schedule changes (if any) at those times.

1.10 Project Construction Implementation Strategy

The TA will be required to develop an analysis of the one-stage and two-stage construction implementation strategy options for delivering the Project, which, at a minimum, will include: cost estimates, approximate schedule, benefits, challenges and risks for each option outlined in section PD 6.

1.11 Permits and Approvals

The TA Team will review all technical reports pertaining to the Site and will obtain additional information as required to develop indicative site and building plans, as well as supporting documents that will be used to:

- i. Demonstrate adherence to all relevant provincial and federal regulations;
- ii. Obtain required federal and provincial permits and approvals;
- iii. Obtain permissions and approvals for non-federally owned utility relocations;
- iv. Acquire municipal approvals, permits and licenses.

To satisfactorily address the approval requirements of the site plan, the supporting documents should:

- i. Outline the purpose and Scope of the Project, including justification, Project alternatives and existing conditions;
- ii. Identify infrastructure and service requirements;
- iii. Identify site-specific constraints;
- iv. Incorporate geotechnical investigation and reports, by a geotechnical engineering consulting firm to supplement, if required, the existing geotechnical information, to determine general geotechnical design parameters and Facility placement on site;
- v. Identify Project activities that may impact environmentally sensitive areas;

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- vi. Identify mitigation measures to be used to reduce impacts;
 - vii. Determine the significance of any residual environmental effects;
 - viii. Identify and incorporate heritage building requirements;
 - ix. Incorporate environmental investigation and reports, by an environmental consulting firm to supplement if required, the existing environmental information, to determine environmental damage mitigation or replacement in sensitive site areas; and
 - x. Develop surveillance and monitoring measures.

1.12 Document Preparation

As part of document preparation, the duties of the TA shall include but not necessarily be limited to:

- a. **P3 Consortium RFQ Documents:** Assist in preparing, reviewing and providing input to the P3 Consortium RFQ documents in conjunction with PWGSC;
- b. **P3 Consortium RFP Documents:** Assist in preparing, reviewing and providing input to the P3 Consortium RFP documents, including developing proposal requirements, detailed evaluation criteria and evaluation methodology of the design, construction and project management sections for the evaluation, selection and negotiation stages of the P3 Consortium RFP procurement process;
- c. **Background Information:** Assisting in the preparation and review of background materials, studies and reports of a technical nature (e.g. geotechnical reports, environmental site and risk assessments, seismic assessment, engineering studies, building condition reports, archaeological studies, etc.), as well as population in the electronic data room to support the P3 Consortium procurement process.
- d. **Project Agreement:** Generating content for sections of and schedules to the Project Agreement including, but not necessarily limited to, the PSOS, performance standards/indicators, site description; design review, design development and construction document submissions; moveable furniture, furnishings and equipment; cash allowance procedure; energy management; quality management; and requirements for commissioning, completion and occupancy processes (this advisory service will primarily involve modifications to the existing template Project Agreement); and addressing Project Agreement issues requiring input from the TA, including attending meetings and drafting text; and
- e. **Cash Allowances:** Working with PWGSC to identify cash allowances for any Facility elements or systems, furnishings, fixtures and equipment, demolition, construction or decanting procedures or other aspects which cannot be accurately defined in the P3 Consortium RFP at the time of issuance.

RS 2 PHASE II – P3 CONSORTIUM PROCUREMENT

In Phase II, the TA Team will assist PWGSC throughout the P3 Consortium procurement process with advice and support related to the design and construction of the Project, including:

- a. Preparing responses to questions and information requests from P3 Consortium Proponents for the P3 Consortium RFQ and the RFP;
- b. Assisting with the development of communications;
- c. Participating in technical submission evaluations under the P3 Consortium RFQ and RFP; and
- d. Advising on the selection of excerpts from the P3 Consortium's proposal to be included in the Project Agreement.

2.1 P3 Consortium Procurement Open-Period

During the P3 Consortium procurement open-period, the duties of the TA are expected to include but may not be limited

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to:

- a. **P3 Consortium Proponent Meetings:** Participating in meetings with P3 Consortium Proponents including site visits, design presentations and commercially confidential meetings to discuss the design, technical requirements, the PSOS, the Project Agreement and to assist P3 Consortium Proponents in interpreting and understanding the P3 Consortium RFP documents and Project Agreement;
- b. **Addenda to P3 Consortium RFQ, RFP and Project Agreement:** Providing consultation and advice to PWGSC, as required, regarding addenda to the P3 Consortium RFQ, RFP and Project Agreement resulting from the commercially confidential meetings and requests for information;
- c. **P3 Consortium Proponent Request for Information:** Assisting PWGSC in the preparation and communication of responses to P3 Consortium Proponent questions throughout the procurement process, including drafting responses to questions relating to design, construction and Facility Management. Support the development of addenda and make any required amendments to specifications based on request for information responses where changes are agreed to; and
- d. **Managing and Maintaining the Electronic Data Room:** The TA will be required to manage and maintain the electronic data room during the procurement process. This will include, but not necessarily be limited to developing appropriate folder structures, posting/replacing documents, ensuring notifications from the system are sent to appropriate team members and acting as the system administrator to provide required access to team members.

2.2 P3 Consortium RFQ and RFP Evaluation

As part of the evaluation process, duties of the TA shall include but may not be limited to:

- a. **Assist PWGSC by participating in the evaluation of the P3 Consortium RFQ and RFP submissions:** Assisting PWGSC with the technical evaluation of the P3 Consortium RFQ and RFP submissions, including reviewing them for compliance with the PSOS;
- b. **Assist PWGSC by participating in the evaluation of innovation in submissions:** Evaluating innovation in the P3 Consortium Proponent proposals and advising PWGSC as to the acceptability of such proposals and their potential value;
- c. **Technical Analysis Report:** Preparing a detailed report of the results of the technical analysis of proposals (with a focus on functionality) for presentation to, and review by, the selection committee including a detailed analysis as to whether the proposal (i) does not meet, (ii) meets, or (iii) exceeds the P3 Consortium RFP technical requirements, and supporting rationale for those conclusions; and
- d. **Support review of construction costs:** Assisting PWGSC with the review of the P3 Consortium Proponents' construction cost submissions to assess the quality and completeness of pricing.

2.3 Selection and Evaluation Stage

As part of the selection and evaluation process, the duties of the TA are expected to include but are not limited to:

- a. **Technical Support:** Providing technical support for Project Agreement negotiations with the P3 Consortium Preferred Proponent, through to Financial Close, including attending required meetings as determined by PWGSC;
- b. **Debriefing:** Supporting PWGSC in debriefing sessions with the unsuccessful P3 Consortium Proponents and participating in lessons-learned sessions with PWGSC at the conclusion of the selection process;
- c. **Final documentation:** Assisting with discussions related to design and construction specifications as a result of negotiations or changes negotiated with the P3 Consortium Preferred Proponent. Assessing and identifying

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impacts to specifications, making recommendations, making drafting changes to technical documentation. Attending periodic Project review meetings and ad-hoc meetings as needed; and

- d. **Treasury Board Submissions:** Assisting with the preparation of Treasury Board Submissions supporting information, presentation and other materials as needed.

OPTIONAL SERVICES

PWGSC is considering the inclusion of long-term financing, maintenance, Facilities Management and lifecycle rehabilitation services in the Project Scope, subject to obtaining necessary approvals. As described in section PD 7, Phase III and Phase IV as well as the maintenance option cannot be exercised until Project and Expenditure amendment approval is received. If Project and Expenditure amended approvals are received, PWGSC may exercise the option to include long-term financing, maintenance, Facility Management services and lifecycle rehabilitation (DBFM model).

If these options are included, the Optional Services Work activity will be included in the TA's Required Services and will be integrated into the Work activity described in the four phases of the TA Services.

The TA will be required to provide all Optional Services described below. The services described below are supplemental to the Required Services described above and the TA will be expected to seamlessly incorporate Phase III, Phase IV, and Facility Management advisory services in order to support PWGSC in the development and delivery of a commercially viable Project using a DBFM model.

OS 1 PHASE I – PRE-PROCUREMENT - MAINTENANCE

1.1 Stakeholder Engagement

1. Lead or participate in engagement sessions with user groups and stakeholder consultations to support the subsequent development of Facility Management Output Specifications.

1.2 Refined Class C Cost Estimate

1. Development of refined Class C cost estimates to include long-term Facility Management services.

1.3 Facility Management Output Specifications

The TA Team will be required to develop the Facility Management Output Specifications portion of the Project Specific Output Specifications that will form an integral part of the Project Agreement to be provided to P3 Consortium Proponents.

The TA Team will assist with the development of the key performance indicator framework that encompasses a performance incentive / penalty regime that will govern the P3 Consortium performance throughout the term of the contract. This framework will be included in the Project Agreement.

The Scope includes working in coordination with the Design Performance Specifications to optimize design and operational requirements with particular attention given to heritage and environmental and sustainability design elements. In addition, work with PWGSC, CRA representatives and the Project Management Team, as well as working

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with other stakeholders and consultants to ensure integration of the Facility Management Output Specifications with other elements of the Project Specific Output Specifications and the Project Agreement.

The Facility Management Output Specifications should ensure the provision of the necessary services and service levels to PWGSC so it can achieve its core objectives. The FMOS should also optimize the maintenance and lifecycle costs of the Facility over the duration of the Project Agreement with the P3 Consortium, including but not necessarily limited to:

1. General integrated management of all Facility services;
2. All operational and tenant related services, including cleaning, waste management and removal, grounds, pest control, parking management, ad hoc services, etc.;
3. All maintenance and repair services, including preventive, corrective, predictive services; and
4. Lifecycle replacement/refurbishment services.

The Facility Management Output Specifications will establish performance criteria to maintain LEED and WELL certifications for the duration of the maintenance contract. The Facility Management Output Specifications will also establish a monitoring program of carbon emissions in order to maintain Carbon Neutral Ready status, and, if required, recommissioning procedures to ensure the building continues to meet the established sustainability targets.

The FMOS shall include Facility Management, which includes, but is not limited to: maintenance, repair and lifecycle replacement/refurbishment services.

The FMOS should provide processes for reporting, annual review and reforecasting of Facility Management costs, including: utilities, operating staff, and building service contracts by the P3 Consortium.

The TA will work with legal advisors to ensure consistency of terminology definition, address specific issues or suggested language changes, etc.

Based on discussion and issues identification, proposed language, changes, items to consider, the TA will do research when necessary and write recommendations for PWGSC with rationale as needed to enable decision making.

OS 2 PHASE II – P3 CONSORTIUM PROCUREMENT - MAINTENANCE

The following services are required as they pertain to Facility Management:

1. Provide technical advice on all matters related to Facility Management during all phases of the procurement process;
2. Prepare responses to questions and information requests from P3 Consortium Proponents for the P3 Consortium RFQ and RFP;
3. Assist with the development of communications;
4. Assist with technical submission evaluations under the P3 Consortium RFQ and RFP.
5. Provide consultation and advice to PWGSC as required regarding addenda to the P3 Consortium RFP documents resulting from the commercially confidential meetings and other communication with P3 Consortium Proponents;
6. Participate in P3 Consortium Proponent meetings including commercially confidential meetings to discuss Project Scope to assist P3 Consortium Proponents in interpreting and understanding the P3 Consortium RFP documents prepared by the TA;

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7. Assist PWGSC with design consultations with the P3 Consortium Proponents and provide written documentation of the design feedback process detailing all compliance issues;
 8. Assist PWGSC with the review of the P3 Consortium Proponents' Facility Management cost submissions to assess the quality and completeness of pricing;
 9. Provide technical support for Project Agreement negotiations with the P3 Consortium Preferred Proponent, through to Commercial Close and Financial Close, including attending required meetings as determined by PWGSC; and
 10. Assist with discussions related to FMOS as a result of negotiations or changes negotiated with the P3 Consortium Preferred Proponent. Assessing and identifying impacts to specifications, making recommendations, making drafting changes to technical documentation. Attending Project review meetings and ad-hoc meetings as needed.

OS 3 PHASE III – DESIGN AND CONSTRUCTION

As part of the post-Financial Close process, the TA Team is expected to assist PWGSC in reviewing the P3 Consortium submissions required by the Project Agreement and in carrying out PWGSC's monitoring and oversight responsibilities during construction. The Required Services comprise the following components: design review and approval; construction oversight and monitoring, including quality management.

3.1 Design Review and Approval

The TA Team is expected to review the P3 Consortium's submissions during design development. Reviews will be interactive with the P3 Consortium and will need to adhere to fast turnarounds for reviews to ensure PWGSC meets its review timelines stipulated in the Project Agreement.

In undertaking these reviews, the TA Team will be required to identify areas of technical non-compliance with the Project Specific Output Specifications and Project Agreement, including but not limited to the following items: drawings, specifications, functional requirements, room finish schedules, commissioning program, completion plan, occupancy plan, proposed Project schedule, LEED and WELL certification strategy, and strategy for sequential building permit approvals.

The Required Services that the TA is expected to undertake as part of this phase is detailed as follows:

3.1.1 Schematic Design

The TA Team is expected to lead certain aspects of the review of the P3 Consortium's technical submissions, including but not necessarily limited to the following items:

- a. Reviewing P3 Consortium submissions for compliance with the technical and design requirements, including the Project Specific Output Specifications;
- b. Conducting day-to-day submission reviews and feedback on behalf of PWGSC to ensure compliance with the design requirements and Project Specific Output Specifications;
- c. Reviewing technical non-compliance lists as required for this stage; and
- d. Reporting to PWGSC detailing the Schematic Design process and acknowledging Schematic Design acceptance.

3.1.2 Design Development

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Work to be undertaken by the TA is expected to include leading and/or supporting all aspects of the review of the P3 Consortium's design development submissions, including the following items:

- a. Conducting day-to-day submission reviews and feedback on behalf of PWGSC to ensure compliance with the design requirements and Project Specific Output Specifications;
- b. Monitoring and assisting the P3 Consortium LEED Enhanced commissioning authority;
- c. Developing technical non-compliance lists as required during this stage;
- d. Reporting to PWGSC detailing the design development process that includes a detailed opinion as to whether the design development is in compliance with the detailed Project Specific Output Specifications and is acceptable;
- e. Participating in regular design committee meetings with the P3 Consortium and PWGSC representatives; and
- f. Assisting the P3 Consortium Proponent to navigate the National Capital Commissioning and Federal Heritage Building Review Office approvals process by providing knowledge, experience, expertise and lessons learned, where practicable.

3.1.3 Construction Documents

The Required Services are expected to include leading all aspects of the review of the P3 Consortium's construction document submissions, including the following items:

- a. Reviewing P3 Consortium demolition, abatement, and construction document submissions with the design requirements, including review of selected shop drawings for consistency;
- b. Monitoring the inclusion of LEED-commissioning requirements into the construction documents through the P3 Consortium LEED Enhanced commissioning authority;
- c. Reviewing technical non-compliance lists as required during this stage;
- d. Providing assistance, where required, in the P3 Consortium's preliminary LEED design review process with the Canada Green Building Council;
- e. Reviewing the P3 Consortium submissions, such as health and safety plans (in particular occupant safety if the 2-stage construction implementation strategy remains), design submissions, quality management plan, security plan, project management plan, schedule, and environmental management plan;
- f. Reviewing the P3 Consortium's submissions against the sustainability, WELL and LEED targets; and
- g. Reporting to PWGSC in details the construction documents process, including the provision of a detailed opinion as to whether or not the construction documents submitted by the P3 Consortium are in compliance with the detailed Output Specifications and are acceptable.

3.2 Construction Oversight and Monitoring

During the construction stage, the TA will be required to monitor the progress of the Project, including the provision of the following services:

- a. Reviewing P3 Consortium construction, commissioning and completion document submissions;
- b. Providing and documenting on-site visits during construction to review conformance with the Project Agreement documents for construction and progress of the Project Works, and submitting reports as required to demonstrate Project progress;
- c. Providing reviews of any periodic submittals provided by the P3 Consortium necessary to assess the progress of the Project Works, as required and as determined by PWGSC throughout the assignment, and report results of such reviews to PWGSC;
- d. Reviewing shop drawings, construction quality reports, deficiency reports, and proposed substitutions and other value engineering proposals from the P3 Consortium;

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- e. Reviewing any variation, change, addition, deletion, substitution, or omission to the Project Works, which will increase or decrease costs of completing the Project Works or will cause material delay in completing the Project Works or affect conformance with the Project Specific Output Specifications, and provide recommendations to PWGSC;
 - f. Providing technical content for all notices of change;
 - g. Providing cost estimates of contemplated changes to ensure fair and reasonable value to Canada;
 - h. Responding to requests for information from the P3 Consortium;
 - i. Reviewing the P3 Consortium's quality management system to confirm that requirements on quality control and quality assurance for all engineering, architectural and construction components are satisfactory;
 - j. Making recommendations for non-destructive, destructive or invasive testing of construction work, as required;
 - k. Reviewing construction mock-ups and adjustments;
 - l. Ensuring the consistency of the preliminary P3 Consortium commissioning plan, completion plan and occupancy plan with the Project Agreement, including the design requirements;
 - m. Review the final P3 Consortium commissioning program, inclusive of LEED-commissioned systems through the P3 Consortium LEED Enhanced commissioning authority;
 - n. Provide oversight of commissioning services to test, verify and prove that system performance and operations comply with the Project Specific Output Specifications;
 - o. Receive status reports on commissioning activities and identify any issues of non-compliance;
 - p. Review P3 Consortium completion documentation and represent PWGSC during the completion certification process;
 - q. Assist PWGSC with the follow-up on the Independent Engineer reports, certification and fees;
 - r. Assist and advise PWGSC, when needed, in technical dispute resolutions involving the contracting authority, design and construction team, and the Independent Engineer;
 - s. Perform occasional spot check audits on site, the frequency and extent of the audits to be adjusted as a function of observations and the noted deficiencies;
 - t. Assist PWGSC in the application of the payment mechanism;
 - u. Provide technical assessment relating to the suitability of the reports, considering comments, observations, and recommendations stemming from the Independent Engineer review;
 - v. In conjunction with the Independent Engineer, review documents relating to quality assurance and quality control processes to determine whether the proposed system of quality assurance and quality control and its application by the P3 Consortium, complies with the requirements of the contract;
 - w. As requested, participate in on-site meetings, design-construction management or special technical meetings, or pre-established audit schedules, however always in keeping with the specific roles and responsibilities of the respective parties;
 - x. Visit the work sites to verify that works designed, developed or being developed are compatible with site conditions;
 - y. Provide related technical advice to the P3 Consortium on reducing carbon emissions to as close to Carbon Neutral-ready as able, reducing GHG and attaining WELL silver certification; and
 - z. Provide related technical advice where applicable.

OS 4 PHASE IV – POST-CONSTRUCTION

The TA will be required to provide the following services for two years commencing on the achievement of Substantial Completion by the P3 Consortium:

1. Support the monitoring of building performance against environmental and sustainability targets and provide technical advice to rectify deficiencies;
2. Support PWGSC in the transition from construction and commissioning to building operation and maintenance; and

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3. Review P3 Consortium document submissions related to transition and occupancy.

OS 5 PHASE III – DESIGN AND CONSTRUCTION - MAINTENANCE

The following services are required as they pertain to Facility Management:

1. Provide technical advice from time-to-time, including preparing responses to P3 Consortium information requests;
2. Review and provide comment on P3 Consortium submittals related to Facility Management;
3. Reviewing any variation, change, addition, deletion, substitution, or omission to Facility Management, which will increase or decrease costs of completing the Project Works or will cause material delay in completing the Project Works or affect conformance with the Facility Management Output Specifications or Project Specific Output Specifications, and provide recommendations to PWGSC;
4. Providing technical content for all notices of change;
5. Providing cost estimates of contemplated changes to ensure fair and reasonable value to Canada; and
6. Responding to requests for information from the P3 Consortium.

OS 6 PHASE IV - POST-CONSTRUCTION - MAINTENANCE

The TA will be required to provide the following services for two years commencing on the achievement of Substantial Completion by the P3 Consortium.

1. Support the preparation and updating of technical non-compliance lists as required;
2. Provide technical advice related to the interpretation of FMOS and support performance monitoring activities by PWGSC;
3. Support PWGSC's contract management activities as they pertain to Facility Management, which includes interpreting performance reports from the P3 Consortium, applying the payment mechanism, conducting spot checks and participating in regular Facility Management committee meetings.
4. Review and provide comments on P3 Consortium submissions related to Facility Management, such as quality management plan, quality audit plan, health and safety plan and emergency response plan.