partnerships
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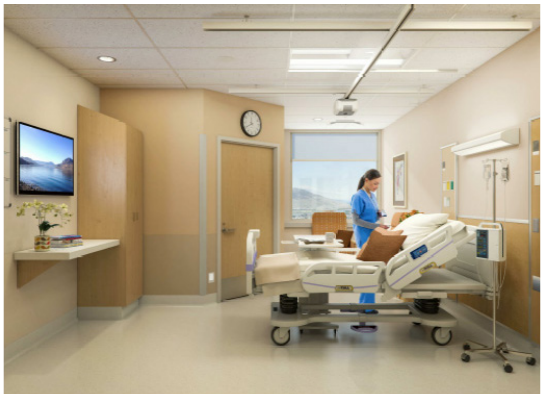

Project Report:

Royal Inland Hospital Patient Care Tower Project

May 2019

BRITISH COLUMBIA

Purpose of this Report

The purpose of this report is to provide key information to the public about the Royal Inland Hospital Patient Care Tower Project (the Project). This report describes the need for the Project and how it will be delivered. The report explains how different procurement delivery methods were analyzed, and how Project benefits and innovations are expected to be achieved. A summary of the key aspects of the Project Agreement is also provided.

In all of its procurement processes, the Government of British Columbia (Government) is committed to a high standard of disclosure as part of its accountability for the delivery of public projects. Ministries, crown corporations and other government agencies are publicly accountable for projects through regular budgeting, auditing and reporting processes.

The Interior Health Capital Project Board is accountable for the Project.

Abbreviations

Abbreviations are defined in the table below:

TABLE 1: ABBREVIATIONS

ASP	Annual Service Payment
B.C.	British Columbia
CAMF	Capital Asset Management Framework
CPJC	Construction Period Joint Committee
CSB	Clinical Services Building
DB	Design Build
DBFM	Design Build Partially Finance and Partially Maintain
Government	Government of British Columbia
IH	Interior Health
MOH	Ministry of Health
NPC	Net Present Cost
OPJC	Operating Period Joint Committee
Partnerships BC	Partnerships British Columbia Inc.
PCT	Patient Care Tower
PPP	Public Private Partnership(s)
Project	Royal Inland Hospital Patient Care Tower Project
RFP	Request for Proposals
RFQ	Request for Qualifications
RIH	Royal Inland Hospital
VFM	Value for Money

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1. Executive Summary

Royal Inland Hospital (RIH) is a tertiary level acute care hospital and serves as the only hospital in the Kamloops Local Health Authority (LHA) as well as a referral hospital for the entire Thompson Cariboo Shuswap Health Services Delivery Area (HSDA).

In February 2017, Government announced the Project which consists of a new patient care tower (PCT) and 209 new parking stalls (44 underground and 165 surface), followed by renovations to the existing site. The request for proposals (RFP) was issued in May 2017 for the design, build, partially finance and maintain (DBFM) procurement. In addition to the design and construction of the PCT and parking stalls, the scope of services also included facilities management (FM) services for the newly constructed PCT, parking and the existing RIH site and Clinical Services Building (CSB); life cycle services for the PCT, parking and CSB; as well as the renovation services that include construction management services for the renovation component, and the design of those renovations.

In 2018, following a competitive selection process based on the principles of openness, transparency and fairness, Interior Health (IH or the Authority) entered into a performance-based, fixed price contract (the Project Agreement) with EllisDon Infrastructure Healthcare (EllisDon). The evaluation methodology used in the selection process included scored criteria to achieve measurable operating outcomes as defined by the experience of IH and peer-reviewed research. These criteria led to numerous improvements over the indicative design and will result in a facility that supports enhanced patient safety, provides a healing environment, and improved staff satisfaction.

Under the resulting Project Agreement, EllisDon will design, build, partially finance and maintain the PCT, and provide site services for the existing site for a term of 33.25 years, which includes the construction period. The total nominal capital cost of the Project is estimated at $417.2 million including both the new PCT and renovations to the existing site. This number includes overall project costs such as capital design and construction costs, renovation services, renovation construction costs, IH-purchased equipment, information management information technology (IMIT), insurance, GST, procurement and implementation costs, and project and management reserves.

EllisDon will also deliver help desk services to the existing site commencing in February 2019, and more fulsome FM services to the existing site commencing in April 2019. After service commencement of the PCT, EllisDon will provide a range of FM services including, but not limited to, help desk, plant management, utility management, and environmental sustainability services to the entire RIH campus. IH will pay EllisDon a monthly service payment which will be based on performance, facility availability, and service quality. Service payments can be reduced if EllisDon does not meet the quality standards contained in the Project Agreement.

The final partnership agreement between IH and EllisDon is estimated to achieve a net present cost (NPC) value for money of $63.590 million compared to the traditional procurement method. Additional benefits from the DBFM delivery model include:

(a) Competition and innovation;
(b) Schedule certainty;
(c) Cost certainty;
(d) Integration; and
(e) Life cycle maintenance.

IH will retain responsibility for all health care delivery at the new facility and all health care services will continue to be publicly funded in accordance with the Canada Health Act. IH will own the facility over the life of the Project.

2. Project Background, Guiding Principles and Scope

2.1 Background

The Royal Inland Hospital (RIH) serves the Thompson Cariboo Shuswap Health Services Delivery Area, the boundaries of which are from Williams Lake to Merritt, and from Kleena Kleene to Revelstoke. It is the referral hospital for the approximately 220,000 people living in the area, and is the only hospital located in the Kamloops Local Health Area.

The hospital was originally constructed to serve its community in 1912. Since the mid-1960's, RIH has functioned continuously as a tertiary level acute care hospital. The existing RIH campus is approximately 51,000 square metres and consists of the following buildings:

- South Tower (built in 1962) – services include critical care, operating suites, pediatrics, renal services, cancer clinic and inpatient units.
- Alumnae Tower (built in 1962) – services include mental health and substance use inpatient unit, child and adolescent mental health crisis intervention program, and other community and home clinics and a student residence.
- North Tower (built in 1978) – services include medical device reprocessing (MDR), administration, pharmacy, outpatient rehabilitation, labour and delivery, and inpatient units.
- Main Building, West Wing (built in 1986) – services include ambulatory care, day surgery, post-anesthetic recovery, inpatient units, education space, morgue and loading dock.
- Main Building, East Wing (built in 1986) – services include laboratory, biomedical engineering, IMIT services and support spaces.
- Emergency and Medical Imaging (expansion and renovation in 2005).
- Hillside Centre (built in 2006) – includes tertiary mental health services.
- Clinical Services Building (the CSB) (built in 2016) – provides hospital-based outpatient services such as cardiology and neuro diagnostic clinics, plus University of British Columbia Faculty of Medicine academic space, and parking.

Between 2009 and 2012, there were renovations and improvements to the cancer clinic, critical care unit, MDR and electrical services at RIH, as well as the renovation of the ground-level helipad. In 2014, a renovation provided RIH with an additional operating theatre to help bridge patient needs until a more permanent update could be accomplished for the entire surgical department.

There are critical challenges facing the hospital. The current infrastructure and overcrowded conditions impede the delivery of efficient, productive and effective health care. Acute care and outpatient services are intermixed throughout RIH causing patients to travel long distances from one treatment to another. Insufficient space impacts the hospital's ability to support family and patient-centred care, and to support cultural needs as required. Many of the existing buildings on the RIH campus were designed prior to current infection prevention and control standards and the hospital is confronted by the speed and intensity of today's infection challenges. The majority of inpatient rooms are multi-bed rooms with shared washroom facilities which compromise patient dignity, privacy and confidentiality, and present safety challenges. Constrained spaces hamper care and contribute to increased safety risks for staff and patients. Congested and dated surgical suites create operational inefficiencies and hinder surgical learning activities. The physical constraints of the hospital also do not foster an environment suitable for clinical education to prepare future health care providers. The physical facility has not kept pace with growing health care needs in the region.

To address these needs, a business plan was finalized and approved in January 2017, and IH received direction to pursue a DBFM procurement model. In April 2017, procurement was launched with the release of the request for qualifications (RFQ).

The total nominal capital cost of the Project is estimated at $417.2 million. This includes elements within and outside of the DBFM arrangement, such as capital design and construction costs plus equipment, IMIT, insurance, GST, procurement and implementation costs, renovation services, renovation construction costs, and project and management reserves. The cost of the Project is being shared by the Government of B.C., IH, the Thompson Regional Hospital District, and the Royal Inland Hospital Foundation.

Completion of the Project will have a profoundly positive impact on the patients and the community served by RIH.

2.2 Project Objectives

Redevelopment of the RIH campus will allow IH to satisfy the following Project objectives:

(a) Deliver a patient-centred Project scope;
(b) Incorporate design features that enhance the well-being of patients, families, visitors, staff and communities including those of Indigenous ancestry;
(c) Improve patient access and flow within the site;
(d) Improve the model of care delivery and patient outcomes (including patient safety) through application of patient-centred, evidence-based design principles and standards for health care facility design and construction;
(e) Create a healthy and safe work environment that improves employee engagement, recruitment and retention, and provides an environment that minimizes the opportunity for workplace injuries;
(f) Support the IMIT strategic plan by providing a robust, flexible technical infrastructure;
(g) Implement integrated electronic health records across the patient continuum of care, including advanced clinical functionality such as electronic clinical documentation, computerized physician order entry, closed loop medication verification, and bedside medication verification;
(h) Optimize utilization of health care services and resource efficiencies to assist in health system sustainability initiatives;
(i) Evaluate the Project based on measurable aspects of the guiding principles, project objectives and departmental objectives through pre-occupancy and post-occupancy reviews;
(j) Maintain full 24/7 hospital operations throughout the construction and operational transition phase for the Project; and
(k) Minimize overall capital and operating costs for the Project.

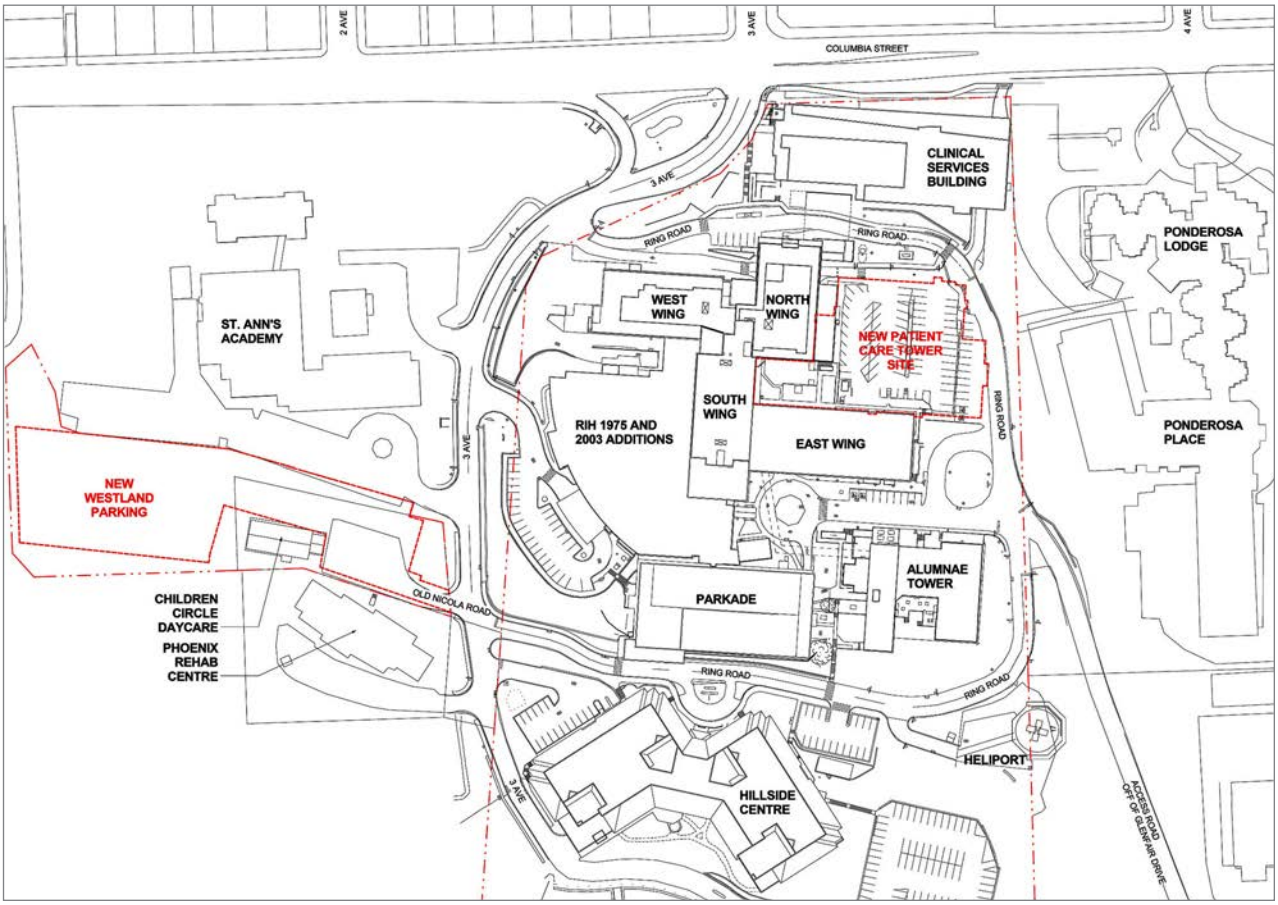
2.3 Scope

The scope of the Project includes construction of the PCT building as well as 44 underground parking stalls and 165 surface stalls. In addition, the Project includes FM services for the newly constructed PCT, parking and the existing RIH site and CSB; life cycle services for the PCT, parking and CSB; and renovation services.

The Project comprises 107 private rooms, 10 standard operating rooms (ORs), one interventional urology operating room, and two hybrid operating rooms. Also included in the PCT is the addition of nine private pediatric bedrooms and one (net new) ICU bed through renovations on the existing RIH site. The Project greatly increases the number of single patient rooms from 18 per cent (44 patients) to 78 per cent (203 patients) of bed stock.

The RIH campus is situated on a steep hillside. The constrained building site creates challenges relating to access, maintaining patient and staff circulation during construction, and managing the single access point from Columbia Street. Figure 1 shows the location of the new PCT and surface parking on the RIH campus:

FIGURE 1: SITE PLAN



The table below provides a high-level overview of the major scope components of the Project which will be delivered via the DBFM procurement model. While elements within the program area requirements were refined during the procurement, there was no change in the overall program areas identified in the 2016 business plan.

TABLE 2: PROJECT SCOPE COMPONENTS

FUNCTIONAL AREA	SCOPE
Parking	• 209 parking stalls – 44 below grade and 165 surface
Main Entrance/Lobby	• Central reception • Foundation • Coffee shop
Pediatric Psychiatry and Child and Adolescent Mental Health Crisis and Intervention Program	• Three private rooms • Counseling room • Private outdoor courtyard • Outpatient mental health and emergency department assessment/intervention
Ambulatory Care	• Relocation of existing orthopedic clinic
Maternal and Child Health Services	• Six private labour, delivery, recovery, post- partum (LDRP) rooms • 14 private obstetric/post-partum inpatient rooms • Seven private neo-natal intensive care unit (NICU) beds • One airborne NICU isolation room • One stabilization nursery (four bassinettes)
Surgical Services	• 13 operating rooms • Patient intake, holding and surgical support areas • Area for assembled case carts • Positioned for direct adjacency to existing obstetrics, maternity clinic, intensive care, and post-partum care
Medical/Surgical, Medical Mental Health Adaptive and Psychiatric Inpatient Units	• 90 rooms (30 rooms per floor in two 15-bed pods over three floors) • All rooms are single-bed rooms with toilet and shower
Helipad	• Rooftop helipad with service elevator
Renovation Services	• Construction management, EllisDon management and design-related services to support Phase 2 of the RIH PCT Project

The Project also includes a renovation component. To support these renovations, EllisDon is required to provide renovation services which will include construction management services for the renovations, and the design of the renovations. The renovation design is estimated to take 12 months and is expected to be completed at the PCT service commencement date. After that date there will be a four-month moving-in period; construction of the renovations will commence after the moving-in period is finished. The construction period for the renovations will be determined when the renovation construction contract(s) are tendered after move-in to the PCT is complete. The requirement to provide the renovation services was included in the 2016 business plan and the RFP.

3. Project Benefits and Key Features

The new PCT will result in an improved model of care and better patient outcomes, additional capacity to meet the growing needs of the increasing demand at RIH, and a healthier and safer work environment for staff. Benefits and key features of the Project are summarized below.

3.1 Optimal Patient and Staff Safety

As a key objective for the Project, outcomes such as reduced adverse surgical and medication events, hospital-acquired infections, patient falls, and staff injuries are targeted through the effective design of the PCT. The design planned for the PCT offers numerous features that have been empirically proven to enhance efficiencies and achieve optimal patient safety. These include:

(a) Separation of routes between patients and staff in key areas;
(b) Larger ORs to meet current clinical safety standards;
(c) Additional single patient rooms to allow for decanting from the current facility and reduction of multi-patient rooms;
(d) Standardized room layouts that ensure needed equipment and supplies are always found in the same place; and
(e) Increased key sight lines from care stations to patient bays that allow staff to better monitor patients.

3.2 Access to Natural Light

Natural light and green space have been proven to enhance healing and reduce a patient's length of stay in hospital. Natural and borrowed light will be optimized and incorporated throughout the new PCT. For example, all patient rooms will have windows allowing for natural light.

3.3 Healing Environment

The new PCT will also include interior design features that provide natural and calming environments which improve patient, family and staff well-being, and reduce the length of patient stays. These design features incorporate patient-friendly and elderly-friendly design concepts and provide a confidential therapeutic environment, access to courtyards/natural environments, and ease of way finding.

3.4 Travel Distance Efficiency

The new PCT will be designed to minimize travel distances for staff and patients and to streamline the flow of supplies. The design provides efficient travel distances between key departments, such as ORs to patient recovery rooms, and maternity to ORs. This ensures that the departments are closely located, which will result in faster response times by staff, improvement of health and safety of both patients and staff, and infection control improvement.

Rendering of the Care Team Station in Maternal and Child Health

4. Project Delivery Options

In accordance with Government's Capital Asset Management Framework (CAMF), the Project team, including IH and Partnerships BC, undertook a procurement options analysis to determine an optimal procurement method for the Project.

4.1 Methodology

The evaluation of procurement options was concerned with identifying the method of delivering the project that would result in the greatest value for money (VFM) on both a qualitative and quantitative (financial) basis. In financial terms, VFM is established by calculating the estimated risk-adjusted cost of a project, based on a particular procurement method, and comparing it to the estimated cost if the project were procured using another method over the same time period.

The evaluation of procurement options involved two main steps. The first step identified key procurement objectives and provided a qualitative assessment of a wide range of available procurement options, including both traditional and partnership methods. The assessment of these procurement options was intended to identify the two procurement methods most appropriate to the project, which would then form the basis of comparison.

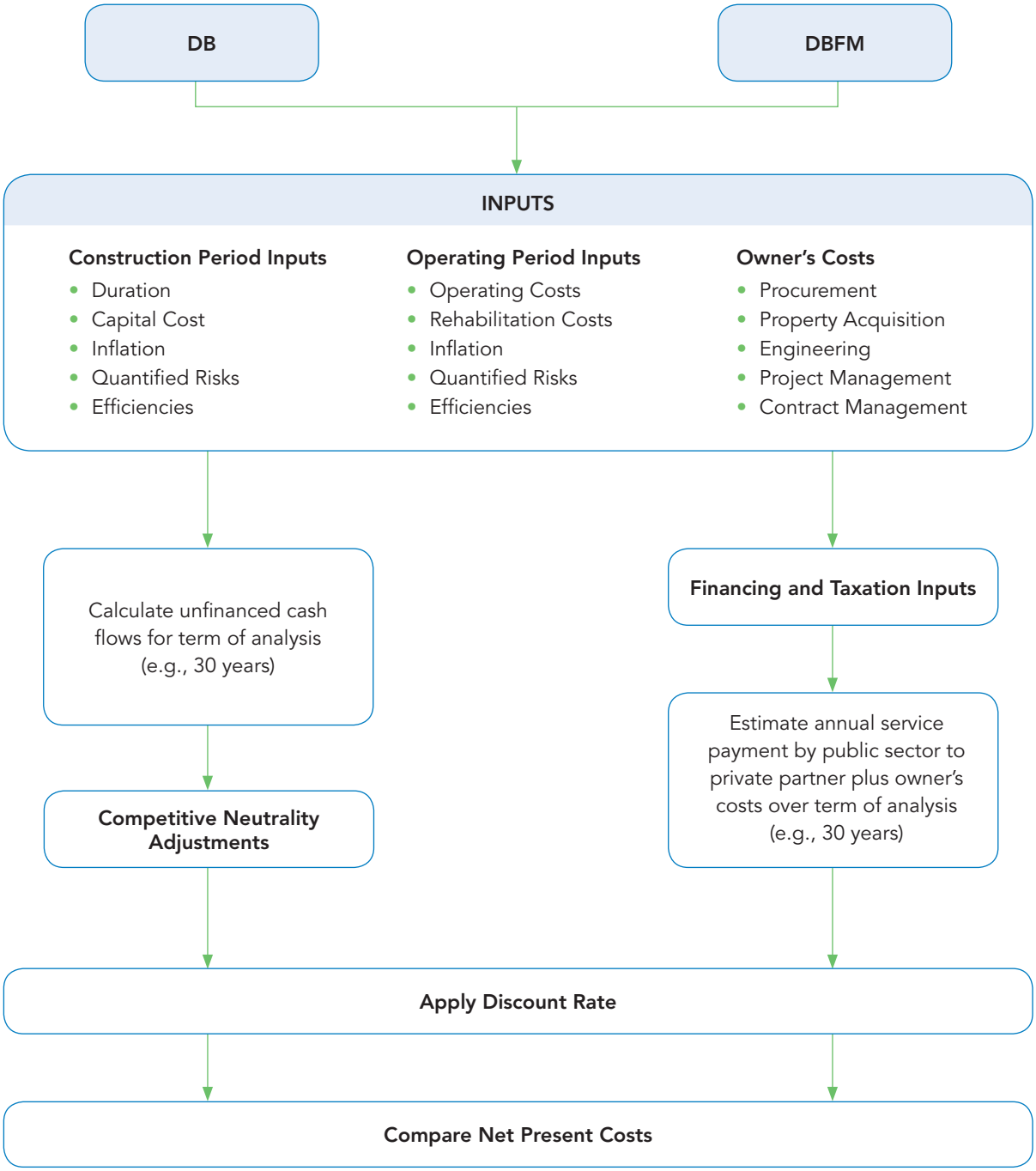
The second step in the assessment involved a more detailed, quantitative analysis that compared the two methods. A comprehensive risk analysis was conducted and financial models representing the two procurement methods were developed and compared. Both procurement methods considered detailed financial inputs that reflect key project components during the construction and operating periods, as well as associated public sector costs under each option.

A discount rate was applied to the projected future cash flows to facilitate an accurate comparison of the two approaches in present day dollars. Discounting allows procurement methods with different cash flow impacts—such as all payments made in the first year of a 30-year period versus payments spread over the 30 years—to be compared on a like-for-like basis. Comparing competing options in this way provided an objective means of determining the approach that provided the best value in terms of cost.

The results of this quantitative comparison between the two procurement methods, together with the qualitative assessment, were used to determine the method expected to provide the best potential value for the Project.

The following graphic illustrates the financial modeling approach used to compare a traditional procurement method and a public private partnership method.[1]

FIGURE 2: FINANCIAL MODELING APPROACH – DETERMINING THE NPC OF ALTERNATIVE PROCUREMENT APPROACHES SUMMARY



[1] For detailed information regarding the "Methodology for Quantitative Procurement Options Analysis", visit http://www.partnershipsbc.ca/publications/resources/.

4.2 Project Procurement Objectives

Procurement options were assessed in consideration of the Project's procurement objectives, which are based on the overarching Project objectives. The following procurement objectives were developed by IH to provide guidance in the selection and analysis of procurement options:

(a) **Schedule Certainty:** Ability to complete the Project in a timely manner and in accordance with the schedule for the procurement model in order to provide the services when needed and to avoid additional costs related to cost escalation.

(b) **Cost Certainty:** Ability to obtain a high level of cost certainty and minimize change and schedule implications of owner-driven change order risk during design and construction.

(c) **Flexibility and Innovation in Design:** Ability to allow for innovation in design from the private sector.

(d) **Asset Performance throughout the Operating Period:** Opportunities to deliver specified asset performance throughout the operating period.

(e) **Optimization between Capital and Operating Costs:** Ability to create an optimal balance between capital cost and long-term operating costs, taking into account potential efficiencies and how one influences the other.

(f) **Facility Operational Efficiency:** Ability to obtain a design solution that positively impacts facility operational efficiency and long-term maintenance requirements.

(g) **Optimal Risk Transfer:** Ability to transfer risks associated with the Project to the party best capable of managing the risk.

4.3 Procurement Options Analyzed

IH and Partnerships BC analyzed two procurement delivery options for the Project: design build (DB) and DBFM. The two options are described below:

- **DB:** Under a DB model, the owner engages an architect and compliance team to develop a concept design for the facility and seeks to enter into an agreement with a private partner who would be required to design and build the facility as specified in the agreement. The first stage of the DB procurement entails an RFQ whereby respondent teams submit qualifications to be received and evaluated by the owner. This evaluation results in a shortlist of proponents who are then invited to participate in the second stage, an RFP. The owner then conducts a competition to select a design-builder to undertake the detailed design and construction of the facility, based primarily upon the performance specifications prepared by the owner's compliance team. The successful team enters into a fixed price contract with payments being made by the owner at specific progress milestones.

  In this model, design and construction risk is transferred to the design-builder, while the owner retains life cycle maintenance risks.

  The key benefits of a DB approach are that it facilitates integrated design and construction from a risk transfer and innovation perspectives.

- **DBFM:** Under a DBFM model, the owner engages an architect and compliance team to develop a concept design for the facility and seeks to enter into an agreement with a private partner who would be required to design, build, partially finance and maintain the facility over the specified term of the agreement. The first stage of the DBFM procurement is an RFQ whereby respondent teams submit qualifications which are received and evaluated by the owner. This evaluation results in a shortlist of proponents who are then invited to submit proposals to the second stage of the process, an RFP. The owner then conducts a competition to select a team to undertake the detailed design and construction of the facility, based primarily upon the performance specifications prepared by the owner's compliance team, and to partially finance and maintain the facility.

The facility maintenance scope assumed to be included in the DBFM model is consistent with other recent health PPPs in B.C.: essentially plant services, utility management, help desk, housekeeping, roads/grounds and landscaping.

Performance payments are made monthly to the private partner over the life of the agreement at a fixed rate determined at financial close. Performance payments only commence once the asset has reached substantial completion. In order for the private partner to receive full payment, they must meet defined and measurable performance and availability standards on a continuous basis. As required in a performance-based contract, the inclusion of private sector equity and external financiers guarantees a long-term commitment and due diligence to the project that results in a degree of prudent owner-type behaviour from the private sector.

The key benefits of a DBFM approach are that it requires the bidders to consider long-term maintenance requirements and provides a financial structure that aligns the incentives of the private partner and the owner.

4.4 Results of the Procurement Options Analysis

Based on the procurement options analyzed, the DBFM method was determined to be the preferred procurement option, expected to best meet the Project's procurement objectives, overall Project objectives, and deliver the best VFM.

4.5 Achieving Value for Money

VFM is the risk-adjusted difference in dollar terms between the partnership model and the traditional delivery model's costs of integrating design and construction, as well as the costs of major maintenance over the duration of the DBFM contract.

While not all benefits are captured in a VFM number, examples of such benefits include timely completion and improved long-term maintenance outcomes (e.g., improved facility condition index scores).

Value for money outcomes are determined based on the successful proposal as shown below.

TABLE 3: QUALITATIVE BENEFITS OF DBFM PROJECTS

DBFM PROJECTS TYPICALLY PROVIDE THE FOLLOWING QUALITATIVE BENEFITS
• **Competition and Innovation:** The competitive nature of the bidding process encourages the private partner teams to develop innovative solutions in all aspects of the project from design and construction through to operations. • **Schedule Certainty:** The private partner receives a significant portion of their payment through monthly availability payments once the facility is available for use, thereby providing a financial incentive to complete the project on time. If construction is delayed and results in a later date for facility availability, monthly availability payments will be forfeited until the facility becomes available. The final date of the contract will not be amended, so the missed availability payments are irretrievable. • **Cost Certainty:** The project agreement is a fixed price contract. It includes design and construction costs as well as FM and life cycle costs for the term of the contract. The operating period costs are adjusted over the contract term based on changes to inflation. • **Integration:** The private partner is responsible for the design and construction, long-term maintenance, and rehabilitation of the asset. This creates opportunities and incentives to integrate these functions to optimize performance of the facility over the duration of the project agreement. • **Life Cycle Maintenance:** The private partner is responsible and accountable for ensuring the facility is maintained and rehabilitated over the duration of the project agreement, otherwise the annual service payment may be reduced.

5. Competitive Selection Process

The Ministry of Finance has mandated, through the Capital Asset Management Framework (CAMF), that the following principles guide all public sector capital procurements:

(a) Fairness, openness and transparency;
(b) Allocation and management of risk;
(c) Value for money and protecting the public interest; and
(d) Competition.

A two-stage competitive selection process was undertaken for the Project.[2] During the RFQ stage, respondents were asked to present their qualifications for the Project. Four teams responded to the RFQ. A shortlist of three teams was selected and invited to participate in the RFP stage. The proponent teams that were invited to participate are described below:

TABLE 4: PROPONENT TEAMS

PROPONENT TEAM	PROJECT TEAM LEAD	EQUITY PROVIDER(S)	DESIGN-BUILDER	ARCHITECT	SERVICE PROVIDER
EllisDon Infrastructure Healthcare	EllisDon Capital Inc.	EllisDon Capital Inc.	EllisDon Design Build Inc.	Kasian Architecture Interior Design and Planning Ltd. Parkin Architects Western Limited	EllisDon Facilities Services Inc.
Inter-River Healthcare Partners	Concert Infrastructure Ltd. Brookfield Financial Securities LP	Concert Infrastructure Ltd. Brookfield Financial Securities LP Bird Capital Limited Partnership	Bird Design-Build Construction Inc.	Perkins + Will, Inc. Kirstein Reite Architecture Inc.	BGIS Brookfield Global Integrated Solutions Canada LP
Plenary PCL Health	Plenary Group (Canada) Ltd.	Plenary Group (Canada) Ltd. PCL Investment Canada Inc.	PCL Constructors Westcoast Inc.	HDR | CEI Architecture Associates Inc.	Johnson Controls Canada L.P.

During the RFP stage, collaborative discussions were undertaken so that each team had the opportunity to discuss issues or concerns related to clinical, commercial, legal, design, construction and facility maintenance matters. Prior to the closing date for submissions, a final draft Project Agreement was issued, and it served as the common basis for all proposals.

[2] The RFQ and RFP procurement documents are publicly available at www.partnershipsbc.ca.

The timeline of the competitive selection process is outlined in the table below.

TABLE 5: COMPETITIVE SELECTION PROCESS

PROCUREMENT STAGE	TIMING	OUTCOME
RFQ	May 2017 to September 2017	The RFQ was marketed publicly on BC Bid. Submissions from four respondents were evaluated and the following shortlist of three teams was announced: • EllisDon Infrastructure Healthcare • Inter-River Healthcare Partners • Plenary PCL Health
RFP	October 2017 to July 2018	The three shortlisted teams were invited to submit proposals in response to the RFP. The three shortlisted teams submitted proposals.
Selection of Preferred Proponent	August 2018	After evaluation of the proposals, EllisDon was identified as the preferred proponent.
Project Agreement Finalization	November 14, 2018	The Project Agreement was executed by IH and EllisDon.

5.1 Evaluation of Proposals

The Project Board appointed an evaluation committee to evaluate the proposals based on the criteria set out in the RFP and to recommend a preferred proponent. As part of the evaluation process, proponents were asked to submit proposals based on a two-part submission process – a technical submission followed by a financial submission.

5.1.1 Technical Evaluation

The first step in the technical submission evaluation process confirmed that all three proponents substantially satisfied the technical requirements of the RFP, including the mandatory requirements, and all three were invited to make a financial submission.

5.1.2 Scored Elements

The second step in the technical evaluation, after the proposals substantially satisfied the technical submission requirements of the RFP, was the scored elements evaluation. The purpose of the scored elements is to develop an effective evaluation framework to assist in selecting the proponent best able to deliver the Project at an affordable cost while ensuring ongoing benefits and outcomes to IH. The net result is to optimize capital costs with ongoing operating costs and patient outcomes.

5.1.2.1 Design Scored Elements

Building on the successful use of design scored elements in numerous projects throughout B.C., IH sought a design solution that would strongly correlate with its Project objectives as identified in section 2.2. From the set of design vision and values, a series of design scored element categories was established for the Project. Proponents were challenged to deliver a building solution that excelled in the following categories:

TABLE 6: DESIGN SCORED ELEMENTS

CATEGORY	BENEFITS TO IH
Travel distance and corridor efficiency	• Increases operational efficiency, staff productivity, staff/patient interaction time. • Reduces staff fatigue and injuries, patient falls. • Creates a positive work environment.
Standardization in both patient and non-patient areas	• Increases productivity of staff, patient safety, patient privacy and confidentiality. • Increases patient and staff satisfaction, decreases staff stress, increases staff effectiveness.
Interior design	• Reduces patient pain, patient and staff stress, adverse events, health care-acquired infections, patient transfers, WCB health claims, and turnover/ recruitment.
Process mapping	• Increases operational efficiency of the facility.
Separation of flows	• Reduces patient day costs and health care-acquired infections. • Increases staff productivity.
Outdoor space	• Reduces patient and staff stress and increases patient and staff satisfaction.
Exterior way finding, building access, and site efficiency	• Reduces patient and family stress. • Improves patient perception of access and way finding. • Increases staff productivity.

For each category, proponents could earn points which would then be converted into a dollar value adjustment to be credited against their financial submission. Each proponent's proposal was evaluated against the scored elements criteria and awarded points for the final ranking process.

5.1.2.2 Operating Scored Elements

The Project is the first in B.C. to introduce the innovative concept of operating scored elements. IH sought an operating solution that would strongly correlate with its Project objectives as identified in section 2.2. A series of operating scored element categories was established for the Project which challenged proponents to deliver an operating solution that excelled in the following categories:

TABLE 7: OPERATING SCORED ELEMENTS

CATEGORY	BENEFITS TO IH
Staffing levels	• The optimal number of staff reduces repair time and downtime. • Reduces staff stress.
Staff qualifications, experience and training	• Increases productivity of staff and decreases staff turnover. • Reduces downtime.
Specific on-site training	• Increases operational efficiency of the facility. • Increases staff productivity and satisfaction. • Reduces downtime.
Operating period representative	• Increases operations quality and efficiency.
Sustainability proposals	• Increases campus efficiency. • Enables smooth operation and integration of the existing buildings with the new PCT.
Facility maintenance integration	• Increases operational efficiency of the facility. • Increases staff productivity and satisfaction. • Reduces downtime.

For each category, proponents could earn points which would then be converted into a dollar value adjustment to be credited against their financial submission. Each proponent's proposal was evaluated against the scored elements criteria and awarded points for the final ranking process.

5.1.3 Financial Evaluation

Similar to the technical evaluation process, the first step in the financial submission evaluation process confirmed that all three proponents substantially satisfied the financial requirements of the RFP, including the mandatory requirements, one of which was that the proposal must not exceed the affordability requirements (affordability ceiling and capital cost ceiling).

5.1.3.1 Affordability Ceiling

The affordability ceiling represents the NPC of the maximum that IH will pay the private sector partner in annual service payments (ASPs) over the life of the Project. For the Project, the ASP consists of four components:

(a) A portion of the capital costs of construction;
(b) Facility maintenance costs;
(c) Major repairs and replacement of building elements (e.g., the roof); and
(d) Management costs throughout the term of the Project Agreement.

The affordability ceiling for the Project was set at $283.0 million NPC.

5.1.3.2 Capital Cost Ceiling

A capital cost ceiling was established to ensure that IH received affordable proposals. The capital cost ceiling was calculated as the sum of the total nominal capital construction costs within the DBFM contract.

The capital cost ceiling for the Project was set at $288.4 million.

5.1.4 Ranking Process

Following the financial evaluation, the proposals were examined to identify the extent to which, if at all, scope ladder items have been used to achieve the Affordability Requirements. The scope ladder is an approved list that proponents can use to reduce the scope. For this project, none of the proposals used scope ladder items. Then, the proposals were ranked based on their adjusted proposal cost in accordance with Appendix A of the RFP. Five adjustments were applied:

(a) Design scored elements adjustment;
(b) Operating scored elements adjustment;
(c) Energy adjustment;
(d) Minor works adjustment; and
(e) Renovation services adjustment.

The **energy adjustment** is a net present cost of the annual cost of energy based on the proponent's proposed design and construction energy target for the 30-year operating period. Proponents were incented to propose a lower energy consumption target by inclusion of this dollar value adjustment to increase their financial submission because the energy adjustment dollar value gets added to their financial submission.

The **minor works adjustment** is a measure of cost savings of the proponent's proposed hourly rates for the minor works required by IH for the 30-year operating period. Proponents were incented to propose lower hourly rates by inclusion of this dollar value adjustment to increase their financial submission, similar to the scored elements.

The **renovation services adjustment** is a proposed price for the design and construction management services to manage the necessary renovations to the existing RIH site. Proponents were incented to propose lower hourly rates by inclusion of this dollar value adjustment to increase their financial submission, similar to the scored elements.

Through this rigorous evaluation process, it was deemed that EllisDon's proposal substantially met the requirements of the RFP and Project Agreement, was under the affordability ceiling and the capital cost ceiling, and had the lowest adjusted proposal cost after the adjustments described in section 5.1.4 were taken into consideration. The Project Board accepted the evaluation committee's recommendation that EllisDon be selected as the preferred proponent for the Project.

5.2 Fairness and Transparency

To ensure all proponents had access to the same information and were treated fairly throughout the competitive selection process, John Singleton, Q.C. of Singleton Urquhart Reynolds Vogel LLP was engaged as a fairness advisor during both the RFQ and RFP stages to monitor all evaluation activities and offer an assessment regarding whether the selection process was carried out in a fair and reasonable manner. The fairness advisor was provided access to all documents, meetings and information related to the evaluation activities throughout the competitive selection processes, and provided his opinion regarding fairness at the end of the procurement (both RFQ and RFP stages).

In addition to ensuring the procurement processes were conducted in a fair manner, it was equally important to ensure a process that was transparent to proponents and the general public alike. For this reason, the RFQ and RFP documents, the final redacted Project Agreement, and the fairness advisor's reports are publicly available at www.partnershipsbc.ca.

5.3 Authority's Project Managment Costs

The Authority's project management costs, including the competitive selection process, are included in the VFM analysis. IH's total project management costs for the Project, from approval of the business plan to completion of construction, are estimated at $17.7 million. This includes the cost of developing performance specifications, preparing procurement documentation, and monitoring the design and construction of the facility using IH's project management team and external advisors.

In addition, partial compensation of $300,000, inclusive of any GST payable, was paid to each of the unsuccessful proponents. Partial compensation can encourage competition, ensure the quality of proposals submitted, secure access to intellectual property, and partially mitigate costs incurred by proponents in developing their proposals.

6. The Final Project Agreement

TABLE 8: RIH PROJECT QUICK FACTS

QUICK FACTS	
Private Partner	EllisDon Infrastructure Healthcare
Facility Owner	Interior Health
Location	Kamloops, B.C.
Construction Complete	2022
Term of the Project Agreement	Construction plus a 30-year operating period
Net Present Cost of Annual Service Payments	$241.632 million

6.1 Profile of the Private Sector Partner

EllisDon Infrastructure Healthcare is a consortium of companies qualified through the RFQ, and consisting of the following key members:

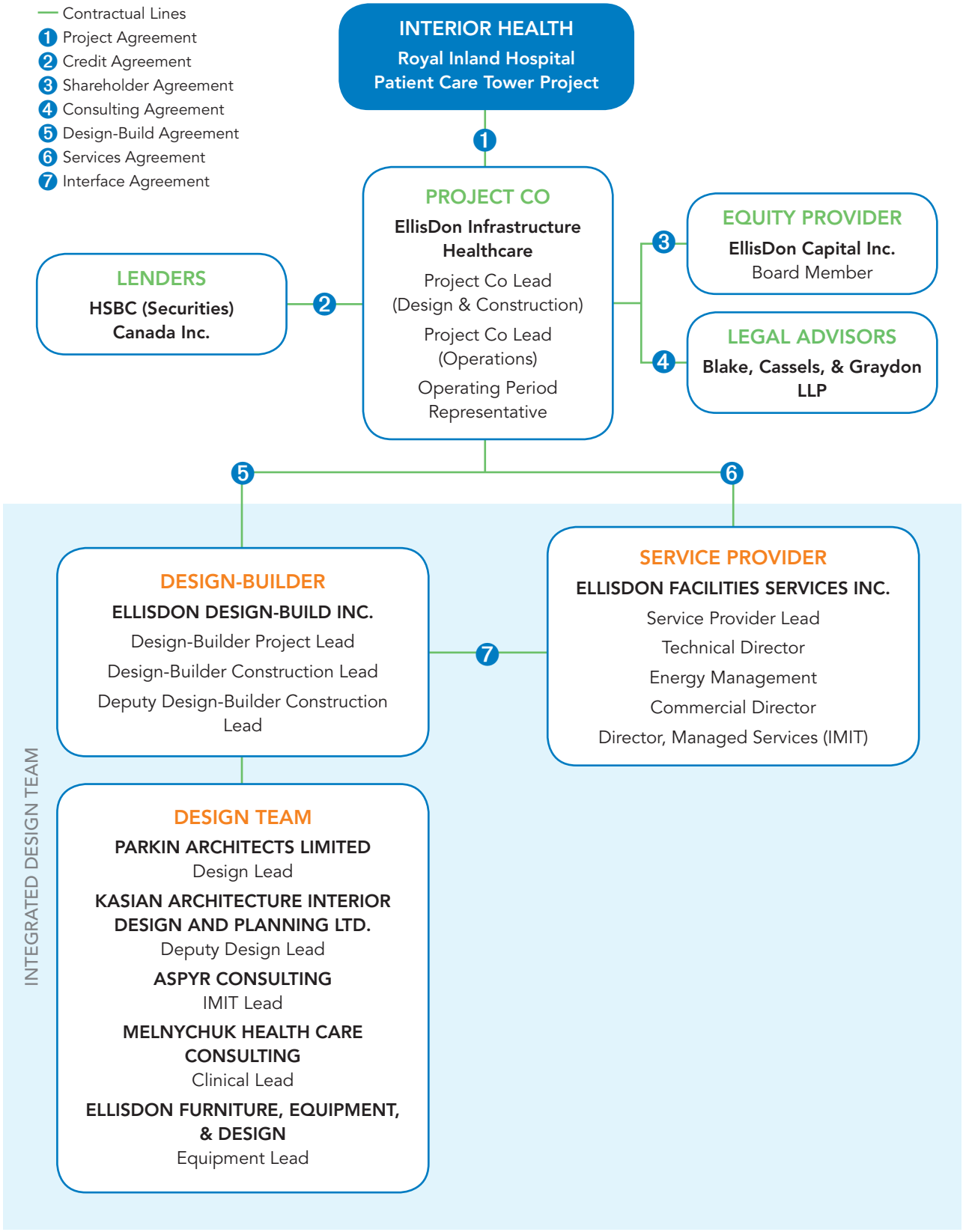
TABLE 9: ELLISDON TEAM MEMBERS

PROPONENT	ROLE	MEMBER
EllisDon Infrastructure Healthcare	Proponent Team Lead	EllisDon Infrastructure Healthcare (EDIH)
	Equity Provider	EllisDon Capital Inc. (EDC)
	Design-Builder	EllisDon Design-Build Inc. (EDDB)
	Design-Builder's Design Firms	Parkin Architects Ltd. (Parkin) Kasian Architecture Interior Design and Planning Ltd. (Kasian)
	Service Provider	EllisDon Facilities Services Inc. (EDFS)

All companies within this consortium have established records in delivering projects of this nature.

Figure 3 below outlines the relationship between IH and EllisDon:

FIGURE 3: RELATIONSHIP BETWEEN IH AND ELLISDON



6.2 Responsibilities of EllisDon

Under the terms of the Project Agreement, EllisDon is responsible for:

(a) Designing and building the Project[3];
(b) Arranging financing for a portion of the construction costs for a specified term (construction plus a 30-year operating period);
(c) Providing facility management services for the new PCT, the CSB and the rest of the existing RIH campus, including:
- general management services
- plant services
- grounds maintenance and landscaping services
- help desk services
- utility/energy management services
- building and systems equipment maintenance
- pest control services
- select IT and communication systems
- capital/tenant improvement services
- parking infrastructure services
- heliport maintenance services;

(d) Life cycle maintenance of the PCT, the CSB, and select campus-wide systems; and
(e) Renovation design and construction management services.

6.3 Performance-Based Payment Principles

During construction, IH will make construction payments on a percentage of the eligible construction costs incurred by EllisDon in a specific month as certified by an independent certifier.

EllisDon is held accountable through a payment mechanism that is based on the principles of performance, facility availability, and service quality. Once construction is complete and service commencement has been achieved, EllisDon will begin receiving an ASP from IH. These payments will be made monthly and are based on the availability of the facility and the quality of facility maintenance services provided by EllisDon. EllisDon's performance will be continuously monitored based on key performance indicators. If the performance standards in the Project Agreement are not met, IH may apply deductions to the ASP.

Payment deductions are based on the severity of the failure to meet the performance indicators, the importance of the room or department area affected, and the level of unavailability. An unavailability deduction applies when a functional unit (room or department) fails to comply with the availability conditions specified in the Project Agreement.

6.4 Adjustments to Payments

The ASP may be adjusted to reflect specific circumstances as defined in the Project Agreement, including:

a) **Indexation:** The capital component of the ASP will not be indexed. The services component (facility management and life cycle) of the payment is indexed by the consumer price index with periodic adjustments to the payment.
b) **Changes:** If IH requires EllisDon to make a physical change or amend the services, IH can pay upfront or have the cost financed. If IH chooses to have the change financed, the cost will be reflected in an amended ASP.
c) **Change in Law:** If there is an eligible change in law (e.g., tax law), the ASP may be adjusted to leave EllisDon in no better or worse position than if that change in law had not occurred.
d) **Compensation Events:** If an event occurs that warrants compensation to EllisDon, the amount may be provided by a lump sum payment or as an adjustment to the ASP.
e) **Life Cycle:** The life cycle costs are not uniform throughout the term and the life cycle component of the service payment will therefore fluctuate.

[3] See section 2.3 for details on Project scope.

6.5 Risk Allocation Summary

The Project Agreement includes detailed risk allocation provisions over construction and the 30-year operating term. This approach transfers key risks to EllisDon such as construction, cost and schedule, and adds value through design and private sector innovation.

TABLE 10: RISK ALLOCATION BETWEEN IH AND ELLISDON

RISK	RETAINED BY IH	SHARED	TRANSFERRED TO ELLISDON
Construction, cost and schedule			✔
Design including errors or omissions			✔
Financing		✔	
Geotechnical			✔
Life cycle			✔
Maintenance			✔
Escalation during construction			✔
Latent defects			✔
LEED® Gold certification			✔
Undisclosed hazardous materials	✔		
IH-supplied equipment, including currency exchange rates	✔		
Errors and omissions in the Project Agreement requirements	✔		
Other (existing) site infrastructure and related integration risk with the PCT		✔	
Renovation construction costs	✔		
Change in law		✔	
Force Majeure		✔	
IH-driven scope changes	✔		

Refer to Appendix B for the description of risks identified in the table above.

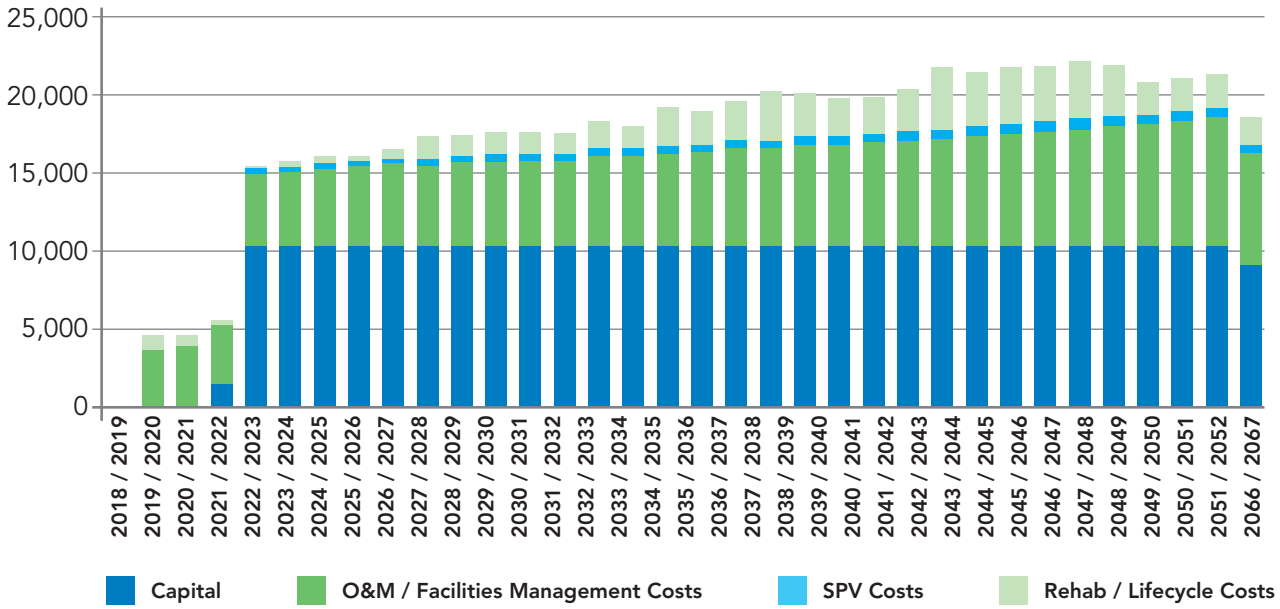
This risk allocation is supported by the following provisions in the Project Agreement:

a) EllisDon will start receiving service payments from IH at the service commencement date, thus providing an incentive to complete the Project on time.
b) The expiry date of the Project Agreement is fixed, so any delays in completing construction will reduce payments to EllisDon, providing them with a strong incentive for timely completion of the construction.
c) Provisions are in place to reduce the ASP if EllisDon does not meet the performance standards in the Project Agreement for facility availability and maintenance.

6.6 Financial Summary

The graph below demonstrates the cash flows to EllisDon that meet the affordability ceiling as defined in the RFP. The graph is expressed in nominal dollars and assumes two percent inflation for FM and life cycle costs. Payment projections assume no penalties or deductions.

FIGURE 4: ELLISDON ANNUAL SERVICE PAYMENTS



6.6.1 Partial Private Financing

The objective of partial private financing is to ensure that the level of private finance and expected performance security is sufficient to cover the transferred risks in the Project Agreement at all times during the proposed term of the Project.

TABLE 11: PRIVATE FINANCING

BENEFITS AND DETERMINING OPTIMUM LEVELS OF PRIVATE FINANCE FOR THE PROJECT

- **Benefits of Private Finance:** Private finance included in the Project brings third-party due diligence of lenders, incentivizes the performance of contractors, and offers security to back the eventual handback requirements.

  For EllisDon to achieve their investment objectives and repay the private finance component, they must ensure that the Project does not cost more or take longer than planned, which provides greater certainty to IH around the cost and schedule of the Project.

- **Determining Optimum Levels of Private Finance for the Project:** To determine the optimal amount and timing of private financing for the Project, an analysis was done that compared the likely magnitude and timing of project risks to the security that private financing provides. The analysis contains both qualitative and quantitative assessments.

  The qualitative assessment takes into consideration factors such as attractiveness to investors of the private financing, an amount of private capital that allows for efficient pricing, and third-party due diligence from both lenders and equity investors.

  The quantitative assessment considered risks in both the construction period and the operating period. During the construction period, the assessment analyzed IH's potential financial exposure should a major risk materialize and lead to termination of the private partner. The estimated cost to IH of such termination, including repair and re-tender, was compared to the amount of private financing already in place at the estimated time of occurrence. At the time of the risk event, the outstanding privately financed amounts represent work that has been completed but for which IH has yet to pay. This provides IH with high quality security.

  For the operating period, three key considerations that influence the level of private finance were assessed:

  1. Private financing significant enough to generate a capital payment that provides capacity for performance deductions to be set at a reasonable level to incentivize the desired behaviour;
  2. Sufficient private financing at-risk towards the end of the project to provide security in respect of the private partner's asset handback obligations; and
  3. The resilience of the private partner to be able to absorb unexpected shocks to its maintenance and life cycle budgets.

  As the cost of private financing exceeds that of public financing, the optimum level of private financing was set at the minimum level that secures the risk transfer and provides protection from key risks, but that is not so high as to add unnecessary costs to the project.

  The level of private financing for the Project was $167.3 million, or 57 per cent, sufficiently large enough to:

  - Be financed efficiently in the markets;
  - Cover material risks in the construction period;
  - Generate a capital payment that provides capacity for performance deductions;
  - Provide security in respect of the asset handback obligations;
  - Attract strong investment interest; and
  - Ensure robust investor oversight in delivery of the Project.

6.6.2 Green Bond

Green bonds enable the raising of capital and investment for new and existing projects with environmental benefits. Following the Green Bond Principles[4], green bonds promote integrity in the financing of projects through guidelines that recommend transparency, disclosure and reporting, and aid investors by ensuring availability of information necessary to evaluate the environmental impact of their green bond investments.

To establish the private financing as a green bond, EllisDon provided a report that outlined the details for the Project lenders, demonstrating that the Project characteristics are consistent with the Green Bond Principles. Items of note that made the Project appropriate for green financing include:

(a) Achieving LEED® Gold certification for the Project, including:
  (1) increased water efficiency during operations; and
  (2) improved indoor air quality.
(b) A design and construction energy target driving reductions in energy use; and
(c) Compliance with the Wood First Act, which promotes the use of wood for construction in British Columbia

The green bond financing was successfully issued and is one of only a few green bond financings in Canada. By achieving green bond status, this financing not only aligns with the four core components of the Green Bond Principles, but also demonstrates innovation by EllisDon, and a commitment to environmental sustainability of the Project.

6.7 Quantitative Benefits

The estimated NPC of the Project delivered using a DB approach is $447.467 million. The estimated NPC of the Project delivered using a DBFM approach and EllisDon's proposal is $383.877 million. A comparison of these numbers is provided below. In financial terms, the final Project is estimated to achieve value for taxpayer dollars of $63.590 million when compared to the DB option.

TABLE 12: VALUE FOR MONEY TABLE

NET PRESENT COST ($000)	DBB OPTION	FINAL PROJECT AGREEMENT
	DBB	**EDIH**
Payments to EDIH[5]		244,050
Capital Costs	237,073	–
RHD Contributions to Capital Costs	–	113,736
Life Cycle and Operating Costs	142,148	
Risk Adjustment	50,263	7,517
Project Planning, Procurement and Implementation Costs	17,983	18,574
Total	**447,467**	**383,877**
Cost Differential	63,590	
Percentage savings from DB to Final PA	14.21%	

* all values in $,000's, NPV date November 1, 2018, Discount rate 5.4% (EllisDon's project IRR)

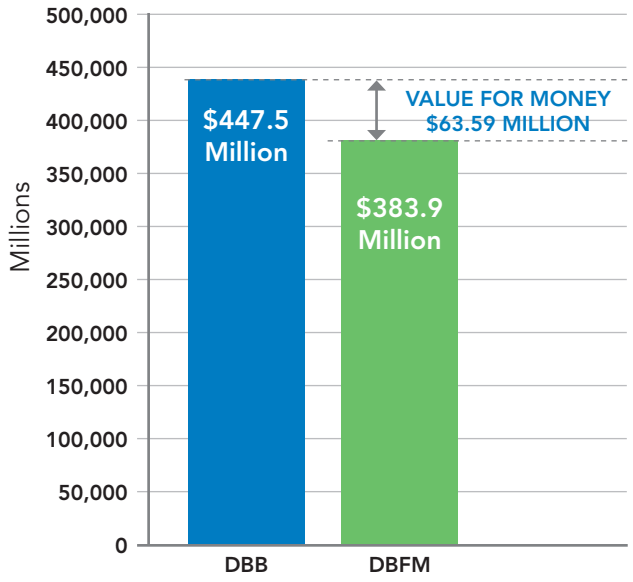
[4] International Capital Markets Association, Green Bond Principles, Voluntary Process Guidelines for Issuing Green Bonds https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/

[5] Includes $2.417 million for Irrecoverable GST.

Significant factors contributing to VFM include:

(a) EllisDon's operating costs;
(b) Life cycle cost efficiencies;
(c) Effective integration of service provider with design-build team; and
(d) Efficient allocation of risk.

FIGURE 5: VALUE FOR MONEY – COST COMPARISON



6.8 Accounting Treatment

The Office of the Comptroller General is responsible for the overall quality and integrity of government's financial management and control systems, and has established accounting guidelines for partnership projects. Based on accounting guidelines, and for accounting purposes, the all-in capital cost for development of the RIH is expected to be $417.2 million which includes the capital cost for the design and construction of the Project, the associated interest during construction, and EllisDon's bid development and financing costs. It also includes Project-specific costs including IH-purchased equipment, IMIT systems, insurance, procurement and implementation costs, and project and management reserves. These costs are accrued to IH through the construction period as the costs are incurred.

7. Ongoing Project Agreement Monitoring

The Project Agreement with EllisDon includes specific provisions to ensure project delivery, performance and quality standards are met. Monitoring spans every phase of the Project, from financial close through design and construction, facility operations and maintenance. There are a number of major phases in the project monitoring schedule, with roles and responsibilities assigned to Project participants at each stage.

7.1 Integrated Project Management Team

A Project Board was established to provide guidance and oversight for the implementation of IH's major capital projects including this Project. Members of the Project Board include representatives from IH, MOH and Partnerships BC.

IH has assembled an integrated project management team responsible for implementing the project through design, construction and transitioning into the operating period. The team reports through a chief project officer to the Project Board.

7.2 Design and Construction Phase

The Project Agreement stipulates that both IH and EllisDon must appoint design and construction representatives. The IH representative will review, approve, accept or confirm EllisDon's activities in accordance with the Project Agreement. The IH representative is supported by a team of professionals (e.g., architects, engineers, lawyers) who, along with the IH representative, will have full access to the construction site, drawings and specifications, and will report observations to the Project Board regularly through the chief project officer.

In addition, a Construction Period Joint Committee (CPJC) will be formed at the commencement of construction. The CPJC formalizes communications between IH and EllisDon with the purpose of providing a formal forum for the parties to consult and cooperate on all matters relating to the Project during construction. The CPJC is a requirement of the Project Agreement and will remain in place until construction is complete and service commencement has been reached.

In support of the aforementioned monitoring activities, IH and EllisDon have also jointly appointed an independent certifier who will monitor and report on construction progress, and provide certification that the conditions for service commencement have been achieved.

7.3 Operations and Maintenance Phase

The Project Agreement stipulates that both IH and EllisDon must appoint a representative to serve as a member of the Operating Period Joint Committee (OPJC). The OPJC is a formal forum for the parties to consult and cooperate on all matters related to the facility during the operating term.

7.4 Quality Management

The Project Agreement is designed to motivate EllisDon to ensure timely delivery, appropriate performance, and high standards of quality through monetary consequences of failing to meet these requirements.

EllisDon is required to have a performance monitoring program in place during the operating period that will monitor the delivery of services. All reports and supporting data generated from this program are readily available to IH at any time for audit purposes. Monthly reports delivered to IH will contain a variety of information, including:

(a) Reporting on whether the key performance indicators were achieved;
(b) A summary of calls made to the facility maintenance help desk and their resolution;
(c) A summary of unavailability events and service failures;
(d) A summary of all work orders for planned and demand maintenance;
(e) A calculation of the monthly service payment owed to EllisDon;
(f) A report of the monthly consumption of energy compared against the energy target; and
(g) A summary of all life safety actions and statutory testing (e.g., fire extinguisher inspections).

These reports allow for a thorough review and analysis on a monthly basis by IH to ensure the facility is performing as intended. It will also ensure building operations and conditions are consistent and achieving established Project objectives. The reports provide key information that determines if the facility is being properly maintained in accordance with the performance standards set out in the Project Agreement.

There are strict penalties if EllisDon misrepresents the monthly report.

7.5 Hand-Back Requirements

At the end of the 30-year operating term, the facility must be in a condition that is consistent with the performance of the services in accordance with the maintenance specifications in the Project Agreement. For example, it would not be acceptable for the building fabric to be failing, the flooring to be unreasonably worn, or the general environment to be unkempt. EllisDon and IH will jointly appoint and pay for an independent party to inspect and survey the condition of the buildings in advance of the end of the Project term. EllisDon is responsible for meeting the handback requirements at the end of the Project term.

8. Glossary of Terms

Affordability Ceiling: The net present cost of the maximum that the owner will pay in annual service payments over the life of a project.

Annual Service Payment (ASP): The mechanism by which the private partner in a DBFM arrangement is compensated. According to performance standards specified in a project agreement, an ASP is paid to the private partner, for capital and operating costs, as well as their required rate of return, over the term of the agreement through monthly installments

Business Case: Document prepared pursuant to CAMF.

Capital Cost Ceiling: The capital cost ceiling calculated as the sum of the total nominal capital costs within the DBFM contract.

Discount Rate: A rate used to relate present and future dollars. Discount rates are expressed as a percentage and are used to reduce the value of future dollars in relation to present dollars. This equalizes varying streams of costs and benefits so that different alternatives can be compared on a like-for-like basis.

Financial Close: The point in the procurement process where negotiations with a preferred proponent are finalized and a project agreement is executed, allowing construction to begin.

Green Bond Principles: Voluntary process guidelines for issuing green bonds established by the International Capital Markets Association.

GST: Federal Goods and Services Tax.

Independent Certifier: An independent, third-party certifier engaged jointly by the owner and the private partner to verify and certify whether certain conditions of the project agreement are being satisfied.

Net Present Cost (NPC): The value of periodic future cost outlays when they are expressed in current, or present day, dollars by discounting them using the discount rate.

Partial Compensation: A payment made to unsuccessful proponents in an RFP process as partial compensation for expenses incurred in submitting a proposal.

Performance Specification: Specifications developed by the owner that define the output and performance levels required in relation to construction and life cycle performance of an asset, to ensure the completed project satisfies the objectives of a project with respect to meeting the owner's service delivery needs.

Project Agreement: The project agreement sets out the requirements for the delivery of an asset under a DBFM in terms of cost, schedule and life cycle performance that typically govern the performance-based payment of the ASP to a private partner.

Request for Proposals (RFP): Document issued by the owner for qualified proponents to submit formal proposals to deliver a project.

Request for Qualifications (RFQ): Document issued by the owner inviting parties interested in participating in an RFP, to submit their qualifications for delivering a project.

Service Commencement: The date upon which the following activities have been achieved: the independent certifier certifies substantial performance of the building; an occupancy permit has been issued; and all construction commissioning activities are complete.

Value for Money (VFM): Also commonly referred to as value for taxpayer dollars, VFM describes the benefits to the public expected to be realized through a particular procurement method, which can be quantitative and/or qualitative in nature. Quantitative VFM is achieved through the lower cost of a project resulting from the procurement method, whereas qualitative value is achieved when a particular procurement method better supports the goals and objectives of a project without necessarily costing less.

Appendix A – Annual Service Payments

($ THOUSANDS)	ASP - REHAB / LIFE CYCLE COSTS	ASP - O&M / FACILITIES MANAGEMENT COSTS	ASP - SPV COSTS	CAPITAL COMPONENT OF ASP	TOTAL ANNUAL SERVICE PAYMENT
2019 / 2020	1,071	3,496	-	-	4,567
2020 / 2021	725	3,743	-	-	4,468
2021 / 2022	276	3,912	50	1,291	5,528
2022 / 2023	185	4,669	405	10,325	15,584
2023 / 2024	243	4,762	413	10,325	15,743
2024 / 2025	455	4,857	421	10,325	16,058
2025 / 2026	331	4,954	430	10,325	16,040
2026 / 2027	693	5,053	438	10,325	16,509
2027 / 2028	1,348	5,155	447	10,325	17,274
2028 / 2029	1,511	5,258	456	10,325	17,550
2029 / 2030	1,584	5,363	465	10,325	17,736
2030 / 2031	1,367	5,470	474	10,325	17,636
2031 / 2032	1,192	5,579	484	10,325	17,580
2032 / 2033	1,813	5,691	494	10,325	18,322
2033 / 2034	1,367	5,805	504	10,325	18,000
2034 / 2035	2,542	5,921	514	10,325	19,301
2035 / 2036	2,039	6,039	524	10,325	18,927
2036 / 2037	2,582	6,160	534	10,325	19,601
2037 / 2038	3,145	6,283	545	10,325	20,298
2038 / 2039	2,847	6,409	556	10,325	20,136
2039 / 2040	2,303	6,537	567	10,325	19,732
2040 / 2041	2,351	6,668	578	10,325	19,922
2041 / 2042	2,610	6,801	590	10,325	20,326
2042 / 2043	3,925	6,937	602	10,325	21,789
2043 / 2044	3,530	7,076	614	10,325	21,544
2044 / 2045	3,724	7,218	626	10,325	21,892
2045 / 2046	3,662	7,362	639	10,325	21,988
2046 / 2047	3,906	7,509	651	10,325	22,391
2047 / 2048	3,390	7,659	664	10,325	22,038
2048 / 2049	2,027	7,813	678	10,325	20,842
2049 / 2050	2,285	7,969	691	10,325	21,269
2050 / 2051	2,264	8,128	705	10,325	21,422
2051 / 2052	1,742	7,254	629	9,034	18,660
Total	**65,035**	**199,511**	**16,388**	**309,740**	**590,673**

Appendix B – Risk Register and Descriptions

As referenced in section 6.5 Risk Allocation Summary:

RISK	DESCRIPTION	RETAINED BY IH	SHARED	TRANSFERRED TO ELLISDON
Construction, cost and schedule	The risk that construction activities cannot be completed on time and/or budget.			✔
Design including errors or omissions	The risk that the design development activities cannot be completed on time and/or budget and the design does not allow the delivery of the services to the services specifications. Risk that design errors or omissions are realized during the construction period.			✔
Financing	The cost and availability risk of EllisDon's financing to meet design and construction costs.		✔	
Geotechnical	Risk that subsurface conditions result in a failure of EllisDon to meet its requirements under the Project Agreement related to the construction and operations of the facility over the term of the agreement.			✔
Life cycle	Risks associated with the replacement and refurbishment of the new facility over the operating phase of the project, including the risk of deferred maintenance.			✔
Maintenance	The risk of payment reduction should the maintenance of equipment or systems not be completed in a timely manner and to the service levels specified in the Project Agreement.			✔
Escalation during construction	The risk that the construction cost increase during the construction period would be higher than estimated.			✔
Latent defects	The risk that minor design flaws (with minor implications) or significant design flaws (with significant implications) are identified during the operations phase.			✔
LEED® Gold certification	The risk of penalties and damages should the design not achieve LEED® Gold certification or meet the energy target.			✔

RISK	DESCRIPTION	RETAINED BY IH	SHARED	TRANSFERRED TO ELLISDON
Undisclosed hazardous materials	The risk of undisclosed or unknown hazardous contaminants that require abatement prior to proceeding with construction.	✔		
IH-supplied equipment, including currency exchange rates	The risk that IH-supplied equipment won't be delivered on time or the budget will be higher.	✔		
Errors and omissions in the Project Agreement requirements	The risk of errors or omissions in the requirements in the executed Project Agreement.	✔		
Other (existing) site infrastructure and related integration risk with the PCT	The risk of difficulties in integrating the existing site with the new PCT, including campus-wide systems like nurse call systems, fire alarm system, pneumatic tube system and others.		✔	
Renovation construction costs	The risk of the renovation costs being higher than estimated.	✔		
Change in Law	The risk that a change in legislation/ regulations, provincial policy or quality standard, which applies generally, will impact on the design or construction of the new facility or provision of the services.		✔	
Force Majeure	Risk that specified unforeseen events will impact on the design or construction of the new facility or on the provision of the services.		✔	
IH-driven scope changes	The risk that IH requires a change to the scope that was not originally contemplated in the Project Agreement, after execution.	✔		

Appendix C – Value for Money Cash Flows

The following table provides nominal cash flows that represent the underlying numbers used to create the net present values in the VFM table in section 6.7 of the Project Report. The cash flows in the following table have been annualized and include all categories of costs included in the VFM table in the Project Report.

The number in the final Project Agreement column includes both payments to the private partner, as well as all Authority costs (e.g., project management). They have not been updated for any changes to the Project Agreement or performance issues after contract execution. It is important to note that the cash flows used to derive the net present cost numbers for the DB and final Project Agreement columns in the VFM table are based on a combination of monthly, quarterly and semi-annual cash flows. Discounting the annual cash flows will produce net present cost numbers, similar to, but not exactly the same as, in the Project Report. The calculation of net present cost numbers is dependent upon the timing of the cash flows, so a difference in the net present cost numbers is to be expected.

FISCAL YEAR END (March 31)	FINAL PROJECT AGREEMENT Cash flows for deal that make up Value for Money ($000s)	DB OPTION Cash flows for deal that make up Value for Money ($000s)
2018	15,713	5,379
2019	21,375	42,765
2020	39,163	100,753
2021	67,797	115,641
2022	32,312	47,210
2023	15,856	10,423
2024	15,810	11,144
2025	16,135	10,704
2026	16,118	13,977
2027	16,586	14,730
2028	17,361	12,264
2029	17,639	12,986
2030	17,829	14,879
2031	17,739	14,861
2032	17,664	16,617
2033	18,441	16,041
2034	18,089	12,496
2035	19,424	14,684
2036	19,043	17,049
2037	19,717	15,444
2038	20,424	16,683
2039	20,270	17,062
2040	19,860	16,231
2041	20,067	19,601
2042	20,452	20,804
2043	21,947	16,749
2044	21,696	16,543
2045	22,055	19,297
2046	22,147	19,988
2047	22,551	21,121
2048	22,219	20,684
2049	21,004	18,132
2050	21,438	23,586
2051	21,553	25,895
2052	19,274	13,518

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