





Value for Money
Assessment
L.F. Wade Airport
Redevelopment Project
Final Report
17 November 2016

Government of Bermuda

Our ref: 23040001

Client ref: RfP September 2016

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Executive Summary

Background

The Government of Bermuda has commissioned Steer Davies Gleave to undertake an independent Value for Money Assessment (VFM) of the project to finance and construct a new airport terminal at Bermuda’s L.F Wade International Airport under a 30-year concession agreement for the construction, operation and maintenance of the airport facilities.

The Government of Bermuda, following extensive analysis and consultation, decided to develop the project using a Government to Government structure in early 2015 and has been in negotiation with CCC/ Aecon since then to optimize the structure and cost of the project.

Our assessment was undertaken between the end of September and early November 2016. Our assessment was based on information provided by the Government of Bermuda and its advisors, supplemented by telephone interviews with key stakeholders, and our own analysis of the economic impacts associated with different options.

Objectives of the Government of Bermuda

In considering the options for the development of the airport facility the Government of Bermuda has a number of policy objectives:

Key objectives
Create a more environmentally sustainable, efficient and cost effective airport (consuming less water and energy)
Stimulate the Bermudian economy and maximize employment
The project does not require any third-party Government financial guarantees
The project does not require any Government capital investment and minimal ongoing expenditures
The project transfers commercial and financial risks of the airport operations to the private sector
The project involves the airport operations being undertaken and managed by internationally respected experts
The project ensures the airport operator is motivated to market and promote Bermuda as a destination for tourists and business travelers
Maintain Government control of critical airport infrastructure (Air Traffic Control, Fire and Rescue Emergency response)
Ensure the airport’s operations are overseen by a dedicated regulatory authority and a management contract including “market standard” terms and conditions, including risk management rights and remedial protections
Increase the long term commercial opportunities for Bermudian owned businesses at the airport, such as retail, food & beverage and other value-added services
Agree a “fixed price/ design specific” airport construction guarantee from a AAA credit rated entity to build the airport “on time, on spec and on budget”
Avoid any sale, assignment or transfer of Bermudian land, buildings or real estate
Provides protection to the Government of Bermuda form the airport operator achieving excessive profits (allowing Bermuda’s direct participation in the upside)

Our assessment

The Government of Bermuda carried out a review of a range of options covering renovation of the airport under Public Sector Delivery as well as the construction of a new terminal under different public and private procurement structures.

In conducting the VFM assessment we have compared the Government of Bermuda's chosen method of procurement: DBFOM Government to Government (G2G) Contract (option B2b in Government's option analysis) with two Public Sector Comparators:

- PSC1: the "status quo" (option A1 in Government's option analysis): which includes maintenance and renovation of the existing terminal to keep the existing terminal operation at current levels of service; and
- PSC2: the DB (option B4 in Government's option analysis): which includes the public sector delivering the construction of the new terminal using traditional design-build procurement methods with the Government of Bermuda retaining responsibilities for the operation and maintenance of the airport.

PSC1 represents the Government's view of the approach it would take without the chosen G2G Contract. We have also include a comparison to PSC2 as this represents a more traditional assessment of the PSC of providing similar outputs and objectives under public sector delivery as compared to the G2G model chosen.

Chosen structure compared to other airport transactions

We have compared the structure of the chosen option to other transactions and large capital projects in the airport sector. We recognize that the size of the passenger throughput (0.8 million), and the requirement of capital expenditure related to the safety and resilience of the airport cannot be perfectly replicated elsewhere.

Even so, the structure developed by the Government of Bermuda and its advisors is similar to market trends in that it is built around a concession agreement transferring capital, maintenance and operating risks to a third party. The length of concession is consistent with market trends and, as is the case in Bermuda, most Governments seek to retain land and assets rights and provide some services and regulatory oversight.

The key difference in other risk transfer transactions is that there has been a tendency to benefit from market competitive tensions. However, a recent review of transactions has noted some noticeable failures in Jamaica and unclear progress on deals in St Lucia and the Bahamas, even though structured competitions took place. In contrast, in this case, the Government of Bermuda has relied upon highly experienced advisors to undertake the negotiations with CCC/Aecon and provide a surrogate for competition. This recognizes that the features of the structure (low traffic, relatively high capital costs) may have led to the deal being unattractive to the market, and leading to potential delays or failure in an open tender process.

We recognize the benefits and risks to an open market tender. We note that the Government of Bermuda and its advisors have demonstrated that they have been able to tailor the capital size and transaction structure during the negotiation process, to an outcome that closely matches its objectives and at least some of the benefits achieved in an open market tender.

Overall VFM assessment

We have analyzed the VFM assessment by undertaking a strategic, financial and economic assessment of the chosen option compared to the two Public Sector Comparators, the results of which are presented below. The strategic and financial analysis has relied on work developed by the Government and its advisors and our independent review. Based on assumptions in the strategic and financial analysis we have developed economic benefits estimates.

We note that the decision to proceed with the G2G option was decided some 18 months prior to this report's preparation and the structuring and capital costs of the preferred option have benefitted from the negotiation process undertaken, one of the main reasons for choosing this model. However, as a result, the options compare different situations, with the estimates of the other models prepared 18 months ago, and using information largely developed for the 2008 Master Plan. These differences mean comparison is suboptimal and these key assumptions, alongside traffic assumptions, should be recognized as the principal differences between the economic and financial outputs of the cases.

Strategic Assessment

As presented in the table below, the strategic assessment shows a clear alignment of the preferred option **G2G** (B2b) with the Government goals and objectives. That is the key reason why the Government decided to move forward with this alternative.

The **status quo** (A1) performs poorly in the strategic case, since it does not meet some of the GoB critical objectives, including safety, efficiency, and economic growth.

The **DB** Option (B4) meets most of the critical objectives, however, it doesn't perform well with the financial objectives (financial guarantees) and it also fails to transfer the airport operation to international experts.

Table.1: VFM- Strategic Assessment

	Environmentally sustainable, efficient and cost effecting airport	Stimulate the Bermudian economy and employment	Provide an enhanced facility	Not require third-party Government financial guarantees	No Government capital investment and minimal ongoing expenditures	Transfers commercial and financial risks of the airport operations to the private sector	Operations managed by internationally respected experts	Ensures the airport operator is motivated to promote Bermuda	Government control of critical airport infrastructure	Protection from the airport operator achieving excessive profits	Avoid any sale, assignment or transfer of Bermudian land, buildings or real estate
PSC1 (A1)	x	x	x	✓✓✓	✓✓	x	x	x	✓✓✓		✓✓✓
PSC2 (B4)	✓✓✓	✓✓	✓✓✓	x	x	x	x	x	✓✓✓		✓✓✓
G2G	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓

Financial Assessment

The financial assessment carried out by the Government and its advisors (Table 2 and Table 4.9) shows the status quo option as the best financial performer in terms of NPV. This is mainly due to the lower capital expenditure compared to the other options.

Table 2: Financial comparison PSC and Preferred

	Status Quo PSC1	DB PSC2	G2G Preferred
NPV (\$m)	-283	-797	-317

Source: Summary of Entrustment Report Appendix 3: Options Analysis

The **G2G option** (B2b) also shows a good financial performance, mainly driven by the low capital expenditure (negotiated with CCC/ Aecon) and debt costs. It is also assumed to achieve the highest traffic growth. This option has been independently reviewed by third parties and therefore we are comfortable with the capex and financial assumptions. However, we believe there is a risk of traffic underperformance, which has been assessed with a sensitivity test to evaluate its impact on the Minimum Revenue Guarantee contribution and Hotel Tax Revenues.

The **DB option** (B4) underperforms compared to the other two options, mainly due to the higher capital costs assumed, as well as their estimated impact on debt costs. We have some concerns with regards to the high Capex assumptions. Although we understand that capex could be higher than B2b, given the disbenefit of not having gone through the CCC/ Aecon negotiated scope optimization, there is potential this could have been partly offset by the competitive tension of a DB structure, but this is uncertain. Moreover, the high capital costs have been based on Master plan assumptions developed in 2008, with a scope different to that agreed for the chosen option. This means the estimates are not accurate enough for a direct comparison. We recognize that a public tender, especially for small scale projects, entails additional costs, implementation risks and potentially failure, all of which have not been taken into account in this analysis.

To assess the potential overestimation of capital costs of the DB option and the impact of traffic underperformance, we have carried out sensitivities, which show that although the DB and G2G get much closer in their financial performance (when the same traffic and capital costs are assumed), there are still benefits related to the partial transfer of risk to the private sector. This includes the reduction of risk in the overrunning of capital costs, which turns out to be the main driver of the NPV performance.

Moreover, the possibility to keep the project debt off the balance sheet reduces significantly the risk of increasing sovereign debt costs. This is a key objective of this Government.

Economic Assessment

The economic assessment shows a clear economic benefit for the development of the new terminal as part of the wider strategy to promote tourism growth in Bermuda. These are not only airport passenger benefits, but also wider benefits that would have an impact on the economic development of the island. There is a general view that those benefits are expected to be intensified with a more efficient operation of the terminal and the joint efforts of the Public and Private sector to encourage traffic growth.

The Status Quo (PSC1) is the best performing option in terms of NPV, however it does not meet the GoB strategic objectives and performs poorly when reviewing the economic benefits.

The G2G (Preferred) option performs well financially, while achieving most of the Government strategic and economic goals. However, it includes some risks associated with traffic underperformance (although they are partially mitigated compared to the same risks on a DB option, which are fully assumed by the Government), as well as challenges on the monitoring of the Concessionaire's performance. The comparison of the G2G option compared with the DB option benefits from the outcome of the negotiated process (in terms of structure and optimized capital costs) resulting in capital costs substantially lower and therefore providing a better financial performance.

The DB (PSC2) option performs better than the PSC1 in the strategic and economic case, but worse than G2G. We do have some concerns regarding the assumptions used to carry out the financial assessment and have therefore asked the Government of Bermuda's advisors to carry out sensitivity analysis on traffic and capital expenditure assumptions to support the assessment. The largest share of the difference with the G2G option is driven by the much greater capital costs assumed for the DB option, which were assumed to be slightly lower than those estimated in the 2008 Master Plan, a project with a very different scope.

The financial performance of the DB option improves significantly when assuming the same capital costs as the G2G option, however, it is acknowledged that achieving those levels of project optimization would have been challenging based on the track record of cost overrun projects in Bermuda. So, while the capital cost differences may be overstated, due to the method of comparison, the DB option carried a significant risk of cover overruns.

Both, the DB and G2G options, with the development of the new terminal, will result in high incremental economic benefits not only to the airport users but to a wider set of interests who would benefit from future economic growth. However, it needs to be recognized that the economic benefits of the new terminal are mostly attributable to a belief that the project, in combination with other Government of Bermuda initiatives, will lead to higher traffic growth. Also, although additional benefits are expected with Private Sector Operation working jointly with the Government, these specific benefits are difficult to quantify.

Based on our review of the circumstances, analysis of the strategic and financial case and estimate of the economic impacts, the Government's chosen option (G2G) represents value for money when compared to the two Public Sector Comparators. The G2G option provides the better combination of meeting strategic objectives and minimizing financial costs to the Government.

However, meeting the traffic growth assumptions is a risk not directly influenced by the new terminal, and in any event the economic benefits calculated are in practice attributable to the wider Government of Bermuda strategy to reinvigorate the air transport and tourism products. This strategy not only include the new airport terminal but also the promotion of new hotels, tourism branding of Bermuda which have some costs which are not taken into consideration.

1 Introduction

This report

- 1.1 The Government of Bermuda (GoB) has commissioned Steer Davies Gleave to undertake an independent Value for Money Assessment of the project to finance and construct a new airport terminal at Bermuda's L.F. Wade International Airport under a 30 year concession agreement for the construction, operation and maintenance of the airport facilities.

Scope of work

- 1.2 The Request for Proposal including the scope of work for this assignment is attached as Appendix A.

Approach

- 1.3 Steer Davies Gleave was commissioned on 28 September 2016 and asked to produce a draft of the report by the 18 October and final report by mid-November. We have reviewed and relied on the information presented in a large number of documents provided by the Government of Bermuda and its advisors, listed at Appendix B. We also undertook telephone interviews with key stakeholders listed in Appendix C.
- 1.4 Given the timescales available we have relied and reviewed on the strategic and financial analysis developed by the Ministry of Finance and its advisors (and not developed our own independent financial projections). Based on the assumptions contained in these analyses, (traffic and financial) we have developed our own analysis of the economic benefits which follow. In all cases we have highlighted limitations to the Government's assumptions and analysis and undertaken sensitivity analysis to highlight the impacts of these.

Disclaimer

- 1.5 Steer Davies Gleave has prepared this work for the Government of Bermuda. This work may only be used within the context and scope of work for which Steer Davies Gleave was commissioned and may not be relied upon in part or whole by any third party or be used for any other purpose.
- 1.6 Any person choosing to use any part of this work without the express and written permission of Steer Davies Gleave shall be deemed to confirm their agreement to indemnify Steer Davies Gleave for all loss or damage resulting therefrom.
- 1.7 Steer Davies Gleave has prepared this work using professional practices and procedures using information available to it at the time and as such, any new information could alter the validity of the results and conclusions made.

- 1.8 This analysis is based on data supplied by the client/collected by third parties. This has been checked whenever possible, however Steer Davies Gleave cannot guarantee the accuracy of such data and does not take responsibility for estimates in so far as they are based on such data.
- 1.9 Any projections contained within this document represent Steer Davies Gleave's best estimates. While they are not precise forecasts, they do represent, in our view, a reasonable expectation for the future, based on the most credible information available as of the date of this report. However, the estimates contained within this document rely on numerous assumptions and judgements and are influenced by external circumstances that can change quickly and can affect income.

Organization of the report

- 1.10 The remainder of this report is organized into the following sections:
- Section 2: a description of our understanding of the Government of Bermuda's objectives for the project;
 - Section 3: an overview of our understanding of the options considered by the Government of Bermuda and the reasons for the chosen option; including a description of their alignment to the strategic, economic and financial objectives;
 - Section 4: a VfM assessment using financial quantitative analysis produced by the Government and its advisors and our economic assessment;
 - Section 5: a high level benchmarking of key features of the transaction to similar airport transactions elsewhere; and
 - Section 6: a summary of our findings.

2 Government of Bermuda objectives

Background to project

- 2.1 Bermuda is a luxury tourism destination with a significant business passenger market related to the insurance industry. However, over the last decade, it has experienced a long term decline in airport passengers to 0.75 million in 2015 from a high of 0.99 million in 2007 (CAGR: -3.5% 1997 to 2014).
- 2.2 The recession post 2008 had a very negative impact on the Bermuda economy. The Government of Bermuda's approach to promoting tourism in the past was to focus on strengthening the marketing strategy to encourage visits to the Island. However, both the accommodation and airport infrastructure has been neglected, resulting in a deterioration and reduction in the quality of the Bermuda offer.
- 2.3 To halt and reverse this trend the new Government adopted a new approach with a greater focus on infrastructure investment. This resulted in a number of infrastructure initiatives, including the renovation of the airport and the incentivisation of new hotel development and upgrading of existing stock (with tax incentives). This strategy also included efforts to rebrand Bermuda as a destination.
- 2.4 These combined actions are designed to improve and develop the Bermudian economy, through tourism, infrastructure development and underpinning the continued success of the insurance services industry.
- 2.5 In 2008, an Airport Master Plan was developed, which included an ambitious (and costly) plan for a new terminal. However, the recession resulted in a large increase in the national debt, affecting the Government of Bermuda's ability to take on the financing of large capital projects, making the airport project unaffordable. The need to explore simpler and more economic solutions was identified.
- 2.6 The airport currently generates net operating cash flows but these are insufficient to support the scale of investment required to redevelop the airport (this situation is not unique to Bermuda as globally airports under 1 million passengers, face similar constraints). The Government of Bermuda currently enjoys an A2 credit rating by Moody's and A+ by Standard & Poor's, and wishes to retain these levels and avoid any escalation in costs of sovereign debt.
- 2.7 As Bermuda is a relatively small country, there is recognition that it does not have the depth and breadth of institutional experience, or resources within Government to procure and manage large scale capital investment projects, involving complex procurement competitions. Moreover, staffing levels within the Government of Bermuda, specifically the Ministry of

Public Works, have been reduced over the past several years. A report by KPMG in 2010¹ provides evidence that there has been a history of capital cost overruns for projects managed by the Government of Bermuda.

2.8 Therefore, the Government of Bermuda faced the following issues:

- A desire to build a new terminal to address the deterioration of the existing airport, with a focus on safety and attractiveness to the passengers.
- A strategy to use infrastructure development as an incentive to develop employment and economic growth on the island;
- A requirement to develop a project that is affordable under the current economic circumstances in Bermuda;
- A requirement to reduce the risk of project cost overrun (a feature of the majority of recent GoB procured infrastructure projects);
- A need to reduce the risk of increasing national debt and try to find solutions with no debt on balance sheet.

2.9 Given the above, the Government of Bermuda identified that the negotiation of a Government to Government (G2G) solution with the Canadian Commerce Corporation (CCC), a Canadian Government entity, was an attractive option that could address most of the identified issues. However, an acceptable solution for both parties needed to be agreed through negotiation in order to mitigate risks and ensure value for money.

2.10 As a result, the decision to proceed with G2G was decided some 18 months prior to the preparation of this report. During this period the project definition and capital costs have been optimized in order to meet the Government requirements at a much reduced cost (compared to the 2008 Master Plan estimates) to make it affordable. The contract structuring has been agreed to meet both parties' objectives, which has been one of the main reasons for choosing this model.

2.11 While negotiating with CCC, the Government of Bermuda has carried out a financial evaluation of different procurement options and has recently commissioned Steer Davies Gleave to undertake an independent Value for Money Assessment.

Airport issues

2.12 L.F. Wade International Airport is a former United States Military Base now controlled and operated by the Bermudian Government. The airport collects fees from airport users and commercial revenues through sales to passengers, property rents and advertising. Tower air traffic control is provided locally under contract, while en-route air traffic control is provided by the Federal Aviation Administration (FAA).

2.13 The airport terminal infrastructure is outdated and in need of repair, with some structural problems to be addressed dating back to the impacts of Hurricane Fabian in 2004. It also limits the ability to redevelop the terminal and update the commercial offering to international standards.

2.14 The Government and its advisors have assessed that the current status of the terminal has significant structural deficiencies that could pose a risk to safety and impact the perception of

¹ A diagnostic review of how the development and implementation of a small sample of capital projects compares with leading international practices, KPMG, 2010

Bermuda for visitors and the brand of a high end tourist resort and business destination it wishes to reinforce. These deficiencies include:

- The inability to withstand category 4 storms;
- Structural integrity of the terminal roof;
- The absence of loading bridges at terminal gates (causing passengers to walk across the tarmac in inclement weather); and
- Insufficient security screening as well as customs and immigration processing capacity.

2.15 The Government sees the redevelopment of the airport as facilitating:

- **Improved customer experience:** with higher quality facilities potentially increasing dwell time of customers, leading to higher commercial spend and leading to a more positive impression of Bermuda as a destination for business, conference and tourism visitors.
- **Improvement in the operational cost efficiency of the terminal:** through cost minimization strategies; and
- **Increased traffic volume and revenue:** tied into the wider efforts to reinvigorate the tourism and hotel industry, by attracting additional airline routes for visitors to Bermuda leading to higher airport revenues (aeronautical and commercial).

Objectives of Government of Bermuda

2.16 In considering the options for the redevelopment of the airport facility, the Government of Bermuda had a number of policy objectives:

Key objectives
Create a more environmentally sustainable, efficient and cost effective airport (consuming less water and energy)
Stimulate the Bermudian economy and maximize employment
The project does not require any third-party Government financial guarantees
The project requires no Government capital investment and minimal ongoing expenditures
The project transfers commercial and financial risks of the airport operations to the private sector
The project involves the airport operations being undertaken and managed by internationally respected experts
The project ensures the airport operator is motivated to market and promote Bermuda as a destination for tourists and business travelers
Maintain Government control of critical airport infrastructure (Air Traffic Control, Fire and Rescue Emergency response)
Ensure the airport's operations are overseen by a dedicated regulatory authority and a management contract including "market standard" terms and conditions, including risk management rights and remedial protections
Increase the long term commercial opportunities for Bermudian owned businesses at the airport, such as retail, food & beverage and other value-added services
Agree a "fixed price/ design specific" airport construction guarantee from a AAA credit rated entity to build the airport "on time, on spec and on budget"
Avoid any sale, assignment or transfer of Bermudian land, buildings or real estate
Provides protection to the Government of Bermuda form the airport operator achieving excessive profits (allowing Bermuda's direct participation in the upside)

Source: Summary of public policy objectives contained in the Entrustment Report Appendix 3

3 Options considered

Overview of options based on GoB analysis

- 3.1 The Government of Bermuda carried out a review and assessment of different options to address the need to upgrade the current airport terminal. The options included different levels of infrastructure investment ranging from maintaining or renovating the current infrastructure to the construction of a new terminal, as well as a review of different procurement options: Public delivery and options including Private Sector Involvement (either partial or full privatization).
- 3.2 Three options have been evaluated for the **renovation of the airport** under Public Sector Delivery and with a phased delivery. However there remains risks of storm surge damage in each case due to the location of the terminal footprint.
- A1 is the “status quo” option and the one that includes the minimum level of investment to maintain the airport at current levels of service.
 - A2 includes a greater level of terminal renovation including strategic investments.
 - A3 includes full renovation of the airport with a wholesale replacement phased over a longer period to improve affordability, and following the approach suggested in the 2008 updated Master Plan.
- 3.3 Six options have been evaluated for the construction of a **new terminal**, under different procurement contracts:
- B1 assumes that the Government takes the responsibility of rebuilding the airport, and involves the private sector only for the operations in return for a lease payment.
 - B2a transfers the Design, Build, Finance, Operation and Maintenance (DBFOM) of the airport to a concessionaire with a 30 year contract. Variant B2b includes a structure with Canadian Commercial Corporation involving a Government to Government concession under the same model.
 - B3 is a Design Build Operate (DBO) contract, where the Government finances the construction costs of the project.
 - B4 is a Design Build (DB) contract, similar to A3 but the project is not phased over time and involves moving the terminal footprint.
 - B5 is a mix of DB for the construction and an invitation to operate the terminal with a Facility Management Service provider.
 - C1 assumes the full privatization of the project, where the Government sells the land and transfers all business assets and personnel to purchaser. The Government’s role is limited to control based on a statutory regulatory regime.
- 3.4 The following table includes a summary of the advantages and disadvantages identified for each option:

Table 3.1: Options analyzed (summary of GoB advisors analysis)

Options	Estimated NPV (\$m)	Advantages	Disadvantage
A- Renovation of Existing Terminal - Public Sector			
<i>A1- Maintain the Airport at Current levels</i>	(283)	<ul style="list-style-type: none"> • Lower short term capital costs • No transaction costs • Bermuda retain net cash flow 	<ul style="list-style-type: none"> • Risk on future expenditures • Security and safety issues • No major change in visitor perception • Long term high maintenance costs • Footprint leaves susceptible to storm surge
<i>A2- Varying Degrees of Capital Renovation</i>	(759)	<ul style="list-style-type: none"> • Limited capital costs, prioritized • Bermuda retain net cash flow 	<ul style="list-style-type: none"> • Risk of phasing on costs, continuity and disruption • Renovation will not change footprint and critical safety issues • Footprint leaves susceptible to storm surge
<i>A3- Entire Airport Renovation in Phases</i>	(838)	<ul style="list-style-type: none"> • Higher capital costs, prioritized • Bermuda retain net cash flow 	<ul style="list-style-type: none"> • Risks of logistics and costs with phasing • Renovation will not change footprint • Major investment affecting borrowing costs • Footprint leaves susceptible to storm surge
B- Construction of new Terminal- partial Private sector involvement			
<i>B1- Government Rebuilds Airport and Outsources O&M</i>	(953)	<ul style="list-style-type: none"> • Change footprint and improved • Government control of design • Operation risk transferred • Government receive lease payments 	<ul style="list-style-type: none"> • Risks on construction • Full capital funding obligation- hit borrowing limit • No integration construction/operation
<i>B2a- Design Build Finance Operate Maintain (DBFOM)- Competitive</i>	(393)	<ul style="list-style-type: none"> • Integration construction/operation • No immediate capital costs and limited financial risk, and no impact on credit rating • Cost funded by increase in passenger fees (no government payments) • Projected increase in passengers results in higher tax and ancillary taxes 	<ul style="list-style-type: none"> • No flexibility to include new users • Higher financing cost than government • Transaction complexity • Oversight of performance assurance
<i>B2b- DBFOM Government-Government</i>	(317)	<ul style="list-style-type: none"> • Similar to B2a but more beneficial financing conditions with CCC (with a AAA rating) • Negotiation reduces transaction costs and fit for purpose contract 	<ul style="list-style-type: none"> • Similar to B2a but with no competing stress
<i>B3- Design Build Operate (DBO)</i>	(1001)	<ul style="list-style-type: none"> • Similar as above 	<ul style="list-style-type: none"> • Government borrowing capacity used • Loss flexibility to new users

Options	Estimated NPV (\$m)	Advantages	Disadvantage
B4- Design Build (DB)	(797)	<ul style="list-style-type: none"> No construction overrun risks Lower financing costs 	<ul style="list-style-type: none"> No construction/operation integration Government borrowing capacity used Commercial and financial risk
B5- Construction Procurement and Facility Management Fee for Service	(675)	<ul style="list-style-type: none"> Similar as above Potential more efficient operation (cost reduction) and risk transfer 	<ul style="list-style-type: none"> Similar as above Oversight of performance assurance
C- Privatization			
C1- Privatization	(393)	<ul style="list-style-type: none"> No capital/operating cost Revenues generated from asset sales and royalty No impact to credit rating If higher traffic volumes increased revenues sale and ancillary taxes 	<ul style="list-style-type: none"> Loss of control Regulatory oversight role Public policy challenges

Source: Entrustment Report Appendix 3: Options Analysis

3.5 The following table shows the assumptions and financial performance for the **renovation** (partial or full) of the airport under Public Sector Delivery:

Table 3.2: Renovation assumptions under Public Sector delivery

		Renovation of Existing Terminal		
		Low A1	Medium A2	High A3
REVENUE	Operating cash flow (2017)	\$4.0m	\$6.9m	\$15.2m
	<i>Traffic growth assumptions (airport and Hotel tax revenues)</i>	<i>No growth</i>	<i>No growth</i>	<i>Low growth</i>
	<i>Passenger Fee Assumptions</i>	<i>No change \$52</i>	<i>Increased \$64</i>	<i>Increased \$91.75</i>
COSTS	Capex (to be financed)	\$184m	\$416m	\$693m
	Maintenance capital costs (pa)	\$5m	\$5m	\$5m
	Debt Borrowing costs	-	+100bps	+100bps
NPV (\$m)		-283	-759	-838

Source: Entrustment Report Appendix 3: Options Analysis

- **Operating cash flow** is retained by the Government. Different incremental cash flow assumptions have been assumed depending on the level of renovation and its potential impact on demand and passenger fees:
 - Option A1 assumes no passenger demand growth and no increase in Passenger Fee;
 - Option A2 assumes no passenger demand growth but includes a moderate increase in the passenger fee to reflect the higher cost of improvement in facilities (+\$12);
 - Option A3 assumes an increase in passenger throughput (low growth case) as a result of the full improvement (although phased) of the facilities and a full increase in the passenger fees (+\$40) to pay for the redevelopment and associated operating costs.
- **Borrowing Costs** also depend on the level of Capital Expenditure:
 - Option A1: the cost estimates are from a Government Technical Advisor study in 2008, split by maintenance costs of \$62.3 million and \$104.8 million of refurbishment and expansion costs.
 - Option A2 and especially A3 require high capital expenditure. It is assumed that Bermuda would need to borrow approximately \$693 million to finance the full renovation of the airport (based on the 2008 Airport Master Plan study). This substantial increase in sovereign debt would weaken GoB's credit profile and would likely result in a credit rating downgrade by the rating agencies, with advisors estimating an expected increase of 100 bps on all Bermudian sovereign borrowing costs.
- The higher capital expenditure and impact on Bermuda's borrowing costs results in an increase in the negative **NPV** impacts for options A2 and A3 as compared to A1.

3.6 The rest of the Options assume the construction of a **new terminal** in the short term, and evaluate the impact of the different private sector involvement in procurement options. The following table shows a summary of the key assumptions and resulting NPV.

Table 3.3: Options for Delivery of a New Terminal

		Construction of New terminal						PRIVATI ZATION C1
		O&M B1	DBFOM B2a	DBFOM B2b	DBO B3	DB B4	DB+O& M B5	
REVENUE	Operating cash flow (2017)	-	-	-	-	\$8.8m	\$13.0m	-
	Incremental hotel tax (2017)	\$0.8m	\$0.8m	\$0.8m	\$0.8m	-	\$0.8m	\$0.8m
	Lease (pa)	\$5m	-	-	-	-	-	-
	<i>Traffic growth assumptions (airport and Hotel tax revenues)</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Low</i>	<i>Base</i>	<i>Base</i>
	<i>Passenger Fee Assumptions</i>	<i>\$91.75</i>	<i>\$91.75</i>	<i>\$91.75</i>	<i>\$91.75</i>	<i>\$91.75</i>	<i>\$91.75</i>	<i>\$91.75</i>
COSTS (\$m)	Capex (to be financed) (\$m)	\$575	()**	\$302*	\$575	\$575	\$575	-
	Maintenance capital costs (\$m pa)	\$5	-	-	-	\$5	\$5	-
	O&M fee (\$m pa)	-	-	-	-	-	\$5m	-
	Government services (\$m pa)	-	\$8.8	\$8.8	-	-	-	\$8.8
	BAA (\$m pa)	\$3.5	\$3.5	\$3.5	\$3.5	-	-	\$3.5
	Tax concession (\$m one-off)	-	\$50	\$50	\$50	-	-	\$50
	Energy subsidy (\$m pa)	-	\$2.6	\$2.6	-	-	-	\$2.6
	Debt	100bps	25bps	0bps	100bps	100bps	100bps	25bps
NPV (\$m)		-953	-393	-317	-1,001	-797	-675	-393

Source: Entrustment Report Appendix 3: Options Analysis

*The DBFOM options assume a different project based on the new proposal developed by CCC/ Aecon. That is the reason for the much lower capex. This figure represents capital expenditures of \$256m and including inflation, contingency costs, builder's insurance and demolition costs.

**No specific capital expenditure has been assumed for B2a.

- **Revenue for the Bermuda Government** is different if the operation is retained or transferred to the Private Sector.
 - Operation retained by the Public Sector (B4 and B5)
 - Option B4 (DB) is the traditional tender procurement method of the GoB. Where the Government retains the ownership and operation of the asset, and therefore the incremental operating cash flow.
 - For Option B5 (DB+O&M), although the operation is subcontracted to a private company, the Government still retains the operating cash flow, in return for an Operation and Maintenance fee.
 - In both cases, it has been assumed that the Government will accrue incremental revenue as a result of:
 - *Growth in traffic*; both options assume traffic growth as a result of the improved facilities. However, lower growth has been assumed in the case of Public operation (traffic low case) compared to private operation (traffic base case).
 - *Increase in Passenger fees* a result of the improved service.
 - Operation transferred to the Private Sector (B1, B2, B3, B5 and C1).

- All these options assume a higher increase of traffic (traffic base case) as a result of the efficiencies and improvement in the level of service provided by the private operator.
Although in all these cases the incremental operating cash flows are retained by the Private Sector, the visitors' growth also results in additional Hotel Tax revenues for the Government.
- In Option B1 (O&M concession), the Private sector retains the incremental operating cash flow, but in return they have to pay a lease to the Government.
- **Costs** for the Bermuda Government is different if the financing of the project is retained or transferred to the Private Sector:
 - Financing retained by the Public Sector:
 - Option B4 (DB) is the traditional tender procurement method of the GoB. Although the design and construction is tendered, it still involves GoB borrowing all of the funds to finance the development. This also applies to other options, where the contract includes private operation (B1, B3, and B5).
 - The capital expenditure for the new terminal has been estimated as \$575 million. These costs were estimated in 2008 Airport Master Plan (\$514 million) and escalated by 2% inflation to 2016 less value engineering initiatives leading to a 10% reduction in cost. It also includes \$20 million in development costs \$23 million in maintenance capex for existing terminal.
 - The substantial increase in sovereign debt would weaken GoB's credit profile and would likely result in a credit rating downgrade by the rating agencies, with an expected increase of up to 100 bps on all Bermudian sovereign debt.
 - Financing transferred to the Private Sector
 - Options B2a (DBFOM) and C1 (Privatization) are the only options where the borrowing capacity of the Government is not compromised, since the Private sector is responsible for financing the project.
 - In these cases, the Government has additional commitments during the concession life, related to minimum revenue guarantee, government services, annual cost of the Bermuda Airport Authority, a Quasi-autonomous non-government organization established to oversee the concessionaire (BAA), tax concession, and energy subsidy. However, the impact on the debt costs is much lower (25 bps).
 - With Option B2b (Government to Government DBFOM), it is assumed that there will be no negative impacts on the Bermuda's credit rating. Moreover, the assumed capital expenditure is substantially lower (\$302m²) as confirmed through an independent costing study by Faithful and Gould in June 2016, which results in an improved financial outcome.

3.7 The DBFOM option B2b, with a Government to Government contract, has been selected by the GoB as the best performing option in financial terms for the provision of the new terminal. This is due to the much lower capital expenditure and the minimum impact on Bermuda's borrowing costs and future capacity.

² This figure represents capital expenditures of \$256m and including inflation, contingency costs, builder's insurance and demolition costs.

Evaluation of options

- 3.8 The Government of Bermuda has selected option B2b (DBFOM Government to Government) as their preferred option.
- 3.9 This chapter includes an independent evaluation of the different alternatives based on the financial projections created and information made available by the Ministry of Finance and its advisors, and has been structured into the following cases:
- Strategic Case: how each option performs with regards to the Government objectives;
 - Financial Case: financial performance of each option (NPV); and
 - Economic Case: evaluation of the economic impacts.
- 3.10 We note that the decision to proceed with B2b was decided some 18 months prior to the preparation of this report and the structuring and capital costs of the preferred option have benefitted from the negotiation process undertaken, one of the main reasons for choosing this model. However, as a result, the options compare different situations, with the estimates of the capital costs and projects used in the other models prepared 18 months ago, and using information largely developed for the 2008 Master Plan. While these differences do not prevent a comparison, they do need to be recognized as different project scopes and one of the main drivers of differences in financial projection.

Strategic Case

- 3.11 The following table shows how each of the options meet the key Government objectives introduced in Section 2 :

Table 3.4: Alignment of options with Government objectives

Key objectives	A1 Low	A2 Medium	A3 High	B1 O&M	B2 DBFOM	B3 DBO	B4 DB	B5 DB+O&M	C1 Privatiz
Create a more environmentally sustainable, efficient and cost effecting airport (consuming less water and energy)	✗	✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
Stimulate the Bermudian economy and maximize employment	✗	✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓	✓✓✓
The project does not require any third-party Government financial guarantees	✓✓ ✓	✗	✗	✗	✓✓✓	✗	✗	✗	✓✓✓
The project does not require any Government capital investment and minimal ongoing expenditures	✓✓	✗	✗	✗	✓✓✓	✗	✗	✗	✓✓✓
The project transfers commercial and financial risks of the airport operations to the private sector	✗	✗	✗	✓	✓✓	✓	✗	✓	✓✓✓
The project involves the airport operations are undertaken and managed by internationally respected experts	✗	✗	✗	✓✓✓	✓✓✓	✓✓✓	✗	✓✓✓	✓✓✓
The project ensures the airport operator is motivated to market and promote Bermuda as a destination for tourists and business travelers	✗	✗	✗	✓✓✓	✓✓✓	✓✓✓	✗	✓✓✓	✓✓✓

Key objectives	A1 Low	A2 Medium	A3 High	B1 O&M	B2 DBFOM	B3 DBO	B4 DB	B5 DB+O&M	C1 Privatiz
Maintain Government control of critical airport infrastructure (Air Traffic Control, Fire and Rescue Emergency response)	✓✓ ✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✗
Ensure the airport’s operations are overseen by a dedicated regulatory authority and a management contract including “market standard” terms and conditions, including risk management rights and remedial protections				✓✓✓	✓✓✓	✓✓✓		✓✓✓	✓✓✓
Increase the long term commercial opportunities for Bermudian owned businesses at the airport, such as retail, food & beverage and other value-added services									
Agree a “fixed price/ design specific” airport construction guarantee from a AAA credit rated entity to build the airport “on time, on spec and on budget”					✓✓✓ (B2b)				
Avoid any sale, assignment or transfer of Bermudian land, buildings or real estate	✓✓ ✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✗
Provides protection to the Government of Bermuda form the airport operator achieving excessive profits (allowing Bermuda’s direct participation in the upside)					✓✓✓				

Source: GoB Objectives, Steer Davies Gleave analysis

3.12 The key findings of the strategic analysis are:

- A1 and A2 do not meet the key Government objectives to provide enhanced, safe and environmentally sustainable facilities, and to change substantially travelers’ perception necessary to stimulate tourism and economic growth. Therefore, these options are not considered further.
- Option C1 transfers fully the ownership of the asset to the Private sector. As one of the GoB key objectives was to retain control of the assets and land, this option is not considered further.
- A3, B1, B3, B4 and B5 involve the Government financing of major capital expenditures, and potentially resulting in a downgrade of Bermuda’s credit rating.
- A1, A2, A3 and B4 involve Public sector operation of the airport, which is believed to not maximize the potential benefits of the airport to encourage increase in traffic and economic growth.

Financial Case

3.13 The Ministry of Finance with assistance from its advisors prepared a reference case, and estimated a net present value for each of the procurement options included in Table 3.2 and Table 3.3, using the following assumptions:

- Discount Rate: Bermuda’s long-term borrowing rate of 4.5%.
- Term: 30-year discount term.
- Inflation: Annual inflation of 2%.

3.14 The following table shows that the best financial results are obtained from either those options with low capital expenditure (A1) or those in which the project financing is transferred to the Private sector, either with a DBFOM or with a full privatization.

Table 3.5: Options NPV

Option			NPV (\$m)
Public	Low	A1	-283
	Medium	A2	-759
	High	A3	-838
PPP	O&M	B1	-953
	DBFOM	B2a	-393
	DBFOM	B2b	-317
	DBO	B3	-1001
	DB	B4	-797
	DB+O&M	B5	-675
Privatization		C1	-393

Source: Entrustment Report Appendix 3: Options Analysis

Low = Status quo maintenance and minimal renovation; Medium = Partial renovation, High = phased full renovation

Economic Case

3.15 As well as the strategic and financial objectives, there are a number of economic and social benefits/dis-benefits associated with the different options.

3.16 These are especially relevant between options in which only partial or phased renovation is assumed (A1, A2 and A3), compared to those that assume the construction of a new terminal. With the later, some of the expected benefits include:

- **Passenger benefits:**
 - The new terminal in conjunction with other Government of Bermuda actions will encourage the reinvigoration of the tourism industry and attraction of additional air routes to the island to serve tourist and business passengers. This could lead to a number of passengers making journey time savings from more direct routings instead of needing to connect within the United States (for example with a wider range of East Coast of US destination) . There will also be potential time savings and benefits related to the expected reduction in queuing times in customs with the new facilities.
 - The redevelopment will address the structural issues with the current terminal infrastructure, which even following refurbishment may have remained with the old terminal infrastructure. Therefore, those options will also provide measurable safety

benefits, efficiencies such as reduced energy use, and greater protection against the impacts of future inclement weather/ Hurricanes.

- **Tourism and visitor wider economic benefits:**

- Tourism is a key component of the Bermuda economy, along with financial services. While tourism has declined since the mid-1990s, it has also been observed that per-tourist spend has increased in the last few years by over 20%³. In 2015 spending per-tourist arriving by air was \$1,177⁴.
- The development of a new attractive airport will be a key component to rebrand the Bermuda destination and reverse the existing declining trend of tourism, while continuing to encourage increasingly up-market visitors with higher associated expenditures on local goods and services.
- The unemployment rate in Bermuda was measured at 7% in 2015, with about 11% of households living under the poverty threshold in an otherwise relatively affluent Bermuda⁵. While modest, there is still an indication of some labor market slackness, and that increasing tourism activity would do more than redistribute employment within the local economy, raising overall employment and incomes on the island.
- Using input-output data⁶ from the Government of Bermuda (Department of Statistics), it is estimated that for every \$1 spent directly by tourists on activities such as hotels, restaurants or leisure, there is an indirect and induced effect that generates another \$1.06 in additional expenditures on supplier industries that provide goods and service to these establishment (transportation, retail/wholesale, professional services). Therefore, the wider economic benefit is considerable.
- We cannot calculate the employment effect using the Bermudan data as they do not generate employment coefficients from the input-output tables. However, using input-output data from the United States Bureau of Economic Analysis (BEA)⁷ for a similar county in the United States (population and industrial structure comparable to Bermuda's), it is estimated that each dollar of direct tourism spending generates 0.58 dollars of wages and salaries across the Bermuda economy. The wage impact includes workers in tourism as well as those in support industries as well.

- **Employment and training benefits:**

- The large scale redevelopment project will provide employment opportunities for local residents, although it is expected that offshore expertise will be needed to train the local Bermudian workforce. These jobs will be at the airport and in the construction sector. The knowledge and skills gained in this project can be applied to

³ Bermuda Tourism Authority, 2015. *Advancing the National Tourism Plan: 2015 Update*.

⁴ <http://www.gotobermuda.com/bermutatourism/Advocacy/Economic-Impact/>

⁵ Government of Bermuda, Department of Statistics, 2015. *Labour Force Survey Executive Report*.

⁶ Input-output models are certainly one of the most commonly used tools for economic analysis, and they are used extensively to conduct economic impact analyses. In this instance, the model is used to compute the total economic impact of a given economic stimulus, including the direct economic impact of spending as well as ancillary activity on industries providing supporting goods and services. For tourism, spending by visitors will directly impact hotels, restaurants and leisure activities, but indirectly transportation, cleaning services, accounting firms, banks, supermarkets, etc..

⁷ United States Department of Commerce, Bureau of Economic Analysis, 1997. *Regional Multipliers: A User Handbook for the Regional Input-Output Modeling System (RIMS II)*. Washington, DC: US Government Printing Office.

future infrastructure and redevelopment project planned for Bermuda in the future. By enriching the labor force, this transfer of knowledge and skills has the potential to reduce the pressures on Bermuda's social assistance programs.

- **Reputational benefits:**
 - Providing an international class airport will help to underpin the reinvigoration of the tourism industry and Bermuda as a brand. It will also support the continuation of the success of the insurance services industry.
- **Safety benefits:**
 - The redevelopment will address the structural issues with the current terminal infrastructure, which even following refurbishment, may have remained with the old terminal infrastructure.

3.17 These benefits are generally expected for all the options where the new terminal is delivered in the short term. However, the impacts are intensified for those alternatives where the private sector manages the airport operation (Options B1, B2, B3, B5 and C1). The private sector involvement in similar projects has proven to be critical to develop and grow new traffic.

Conclusion

- 3.18 Based on the analysis above, the following table shows the performance of each alternative based on the 3 cases:

Table 3.6: Summary of Option Evaluation

Option			Strategic Case	Financial Case	Economic case
PUBLIC RENOVATION WITH INVESTMENT	Low	A1	✗	✓✓✓	✗
	Medium	A2	✗	✓	✗
	High	A3	✓	✓	✓
NEW TERMINAL	O&M	B1	✓	✓	✓✓✓
	DBFOM	B2a	✓✓	✓✓✓	✓✓✓
	DBFOM	B2b	✓✓✓	✓✓✓	✓✓✓
	DBO	B3	✓	✗	✓✓✓
	DB	B4	✓	✓	✓✓
	DB+O&M	B5	✓	✓	✓✓✓
PRIVATIZATION		C1	✗	✓✓✓	✓✓✓

- 3.19 The table above shows how the DBFOM (B2a and B2b) option is the one that best meets the Government objectives, and provides good performance on the Financial (preliminary analysis⁸) and Economic cases.

⁸ Financial analysis has been based on Entrustment Report 3: Options Analysis

DBFOM- Tender vs Bilateral Government to Government approach

- 3.20 A **Public Tender** process is typically the preferred option for the procurement of DBFOM contracts, since competition encourages the private sector to propose innovative ideas to provide the most cost-effective solution.
- 3.21 However, the GoB has chosen a **negotiated approach**, which involves the Canadian Commercial Corporation (“CCC”) and Aecon, being retained on a negotiated bilateral basis to build the new airport under a fixed-price, turnkey contract, raising financing, and operating/maintaining the airport for a 30-year period.
- 3.22 The main reasons are as follows:
- **Mitigation of Failed Procurement:** a public tender process always has the risk of failed procurement if no viable or compliant bids are submitted. A no-bid or unacceptable bids option would expose GoB to significant costs and delays in project implementation (a public tender process could cost in excess of \$15m and take over 18 months). A negotiated approach has allowed the Government to customize the specifications to their specific goals and objectives. Given the relatively small size of Bermuda’s traffic throughout (less than a million) the risks associated with a failed procurement process were perceived as high. Moreover, as Bermuda does not have the institutional experience to run such a tender it would be heavily reliant on external advisors.
 - **Reduction of Procurement costs:** A public tender process could be expensive and lengthy. During the negotiation process, CCC/ Aecon has conducted many of the studies that GoB would have needed to complete in advance of a competitive tender. This has reduced costs and timescales.
 - **Competitive Capex proposal:** Based on the fiscal constraints faced by the GoB, CCC/Aecon has proposed a much lower construction price than estimated in the 2008 Master Plan studies. While the project in the 2008 Master Plan and the project proposed by CCC/Aecon are very different and not directly comparable, the project proposed by CCC/Aecon is able to deliver on government objectives at a lower cost.
 - **Competitive Financial proposal:** the Canadian Government (AAA) backing the fixed price construction contract, reduces significantly the risk and insulates GoB from the contractor credit risk and lowers the debt financing costs as well.
- 3.23 The preliminary financial assessment also anticipates better financial performance under the Government to Government approach based on the following assumptions:
- **Revenue** for the Government (related to the Hotel tax fees) has been assumed to be the same.
 - **Capex costs:** The Ministry of Finance and its advisors have not estimated the capex under a potential DBFOM tender process. Nonetheless, the negotiated process has allowed the GoB to explore and identify with CCC/ Aecon an optimal alternative solution, which meets the Government’s objectives but with much lower capital costs compared to the 2008 Master Plan (\$302m⁹).
The large differences in the capex between the two options reflect not only differences in the approach but also major differences in the scope of the project. These differences

⁹ This figure represents capital expenditures of \$256m including inflation, contingency costs, builder’s insurance and demolition costs

cause concerns as to their comparability; however, it is understood that this is the only data point available.

- **Debt costs:** it has been assumed that in a Public Tender, and with potentially higher capex costs, the GoB would likely need to provide capital in the form of a Substantial Completion payment to ensure a financially viable project and a successful competitive tender. And it is likely that a traffic revenue guarantee would have been required as a direct guarantee of the project debt, instead of the more flexible “Reserve Account” approach. This is estimated to have an impact of increasing the sovereign debt costs by 25bps.
- The rest of the assumptions have been kept the same:

Table 3.7: summary of assumptions Tender DBFOM vs G2G

		DBFO B2a	G2G B2b
REVENUE (\$m)	Hotel tax- traffic growth (2017)	0.8	0.8
	<i>Traffic growth assumptions (airport and Hotel tax revenues)</i>	<i>Base</i>	<i>Base</i>
	<i>Passenger Fee Assumptions</i>	<i>\$91.75</i>	<i>\$91.75</i>
COSTS (\$m)	Capex (to be financed) (\$m)	N/A	\$302*
	Government services (\$m pa)	\$8.8	\$8.8
	BAA (\$m pa)	\$3.6	\$3.6
	Tax concession(\$m one-off)	\$50	\$50
	Energy subsidy (\$m pa)	\$2.6	\$2.6
	Debt	25bps	0bps
NPV (\$m)		-393	-317

Source: Entrustment Report Appendix 3

* Figure is \$256 million when including allowance for contingency, demolition costs, inflation and insurance

4 The proposed private concession compared to the Public Sector Comparator

Introduction

- 4.1 The objective of this section is to assess the Value for Money of the selected alternative “the construction, operation and maintenance of a new terminal under a DBFOM Government to Government contract”.
- 4.2 For this purpose, we compare the strategic, financial and economic case of the project under two different options:
- Preferred option: DBFOM Government to Government (G2G) contract; and the
 - Public Sector comparator: discussed in the section below.

Selection and description of the reference cases

Public Sector Comparator (PSC)

- 4.3 The Public Sector Comparator as developed by the Ministry of Finance and its advisors is a "Status Quo" option which involves keeping the existing terminal operational, at the current level of service with the necessary level of maintenance and capital investment. This option does not deliver the same type of project or economic and social benefits as the proposed option (a new terminal), therefore it is not directly comparable with this preferred option.
- 4.4 Although this option to maintain existing service levels was far from ideal in terms of economic benefits and improvements to safety, this was the only available option to the Government at the time should the negotiated process not moved forward.
- 4.5 In order to compare like for like projects, we also compare the selected Government to Government DBFOM option with Option B4 (DB), where the Public Sector procures the construction of the new terminal using traditional procurement methods, but retains the ownership and operation of the airport. This solution, although it does not include the same scope of project as later negotiated with CCC/ Aecon, is expected to deliver similar strategic and economic objectives. However, this option was not considered by the Government as a viable option, given that it required the full financing of the project, having impacts on the sovereign debt costs and because the Government had concerns over their institutional ability to procure and manage large capital projects successfully.

4.6 Therefore we have analyzed both as compared to the preferred option:

- **PSC1:** is the “Status Quo” option A1.
- **PSC2:** is the “DB” option B4.

Preferred and Selected Option- DBFO Government to Government (G2G)

4.7 The preferred arrangement is a negotiated DBFOM contract between the Government of Bermuda and CCC/Aecon. This was decided by the Government some 18 months ago and the Government had proceeded with bilateral negotiations to move forward with the project. The negotiated concession terms are as follows:

Table 4.1 Key concession terms

Concession	
Concession Term	30 years (no extension options)
Scope	Build new terminal, operate and maintain terminal for concession term
Regulated Rate Setting	Annual indexation in rates by inflation. Rates include Departure Tax, Airport Infrastructure Charge, Passenger Facility Charge, Landing Fee
Payment Mechanism	Project Co to receive airport revenues and pay operating costs (in simple terms)
Phase1 Construction	
Project Capital Expenditure	\$302 ¹⁰
Construction Timeline	40 months
CCC Guarantee	Fixed price, date certain contract with 45%+ construction price cost overrun coverage
Bermuda Contribution and Benefits	
Energy	Bermuda responsible for energy costs net of tenant reimbursements (Year 1 to 26 only)
Retained Government Services (RGS)	Bermuda responsible for RGS during concession. This includes air fire and rescue, ground electronics, ATC, and meteorological
Pre-Existing Environmental Liabilities	Bermuda responsible for any remediation costs
Minimum Revenue Guarantee*	Bermuda provides minimum revenue guarantee on regulated revenues to provide support to lenders under downside case
Upside Sharing*	Bermuda receives 50% of regulated revenues above target forecast
Aecon Contribution and Benefits	
Financing	Equity Investment: \$65 million, Debt: \$275 million
Expertise	Design, construction and operations
Performance Risk	Full cost and revenue on traffic and terminal ancillary revenues

* The revenue guarantee and upside sharing mechanism is based on the following:

- **Minimum Demand Guarantee Line:** this is based on the debt profile. Preliminary assumptions indicate Minimum Demand Guarantee Line will approximate the historical low of 756K passengers seen in 2015 for the majority of the concession.
- **Upside Demand Sharing Line:** Preliminary assumptions indicate Upside Demand Sharing Line to be based on 2016-2045 traffic growth of 0.75% CAGR.

4.8 The project capital expenditure is estimated to be \$256m (excluding inflation, contingency costs and demolition costs or \$302 million including these items) which will be partially financed with equity investment and debt. During the construction period the total costs are

¹⁰ This figure is \$256 million and including escalation, demolition costs and contingency costs

estimated to be approximately \$430m. The following table shows indicative sources and uses of capital during construction prepared by CCC/ Aecon:

Table 4.2: Indicative sources and uses of capital during construction

Sources (\$m)		Uses (\$m)	
Senior Debt	275	Airport Capital Costs	302 ¹¹
Alf Subordinate Note	6	Pre-funding of Reserve Accounts	31
Common Equity	65	Maintenance Capex Account Funding	10
Net Operating Revenue	84	Debt Service Account Funding	62
		Other Development Costs	25
Total Sources	430	Total Uses	430

Source: 4th Bermuda Airport Consultative Committee ("ACC") Meeting, September 16, 2016, Montreal

Financial Case comparison

Financial Case PSC 1- "Status Quo" (A1)

- 4.9 PSC1 is an option which involves keeping the existing terminal operational, at current levels of service, with the necessary level of maintenance and capital investment, using the following key assumptions.

Table 4.3: PSC1 Status Quo – GoB and its Advisors' assumptions

Cash Flow Item	Description
Airport Operating Cash Flows (+)	Represents net cash flows generated by the airport that would be retained by the Bermuda government. Cash flows have been forecast under the no revenue growth. Rationale for no growth scenario is that there would be no change in the commercial, operational, or management capabilities of the airport under this option and the terminal would be in poor physical condition which would hinder growth.
Borrowing Costs (-)	Bermuda would need to borrow ~\$184 million to finance urgent near term maintenance and improvements in the first two years. This would be done through general government borrowing with no impact on Bermuda's sovereign rating. Debt repayment was assumed to occur over a 30 year period in order to ensure comparability to the other options. These are conservative assumptions and the costs could be substantially higher depending on the scope of the work required or increases in Bermuda's cost of borrowing.
Incremental Hotel Tax Revenue (-)	Under this option, Bermuda would likely have lower passenger volumes and hotel accommodation tax revenue to the government would decrease.
Maintenance Costs (-)	Bermuda would be required to pay for ongoing maintenance costs for the airport under this option. They estimate this to be \$5.0 million per year based on historical capital expenditures, although the actual value would likely be much higher, and escalated at 5% per Bermuda's technical advisor analysis.

Source: Entrustment report Appendix 3

- 4.10 The resulting estimated cash flows are as follows:

¹¹ This figure is \$256 million and including escalation, demolition costs and contingency costs

Table 4.4: PSC1 Status Quo - GoB Advisor illustrative NPV analysis

Illustrative Net Present Value Analysis – Status Quo (\$ millions)											
	2017	2018	2019	2020	2021	2022	2023	2024	2025		2046
Cash Inflows											
Airport Operating Cash Flows	4.0	4.1	4.2	4.2	4.3	4.4	4.5	4.6	4.7		7.1
Net Cash Inflows	4.0	4.1	4.2	4.2	4.3	4.4	4.5	4.6	4.7		7.1
Cash Outflows											
Project Borrowing Costs	(14.0)	(13.7)	(13.4)	(13.2)	(12.9)	(12.6)	(12.4)	(12.1)	(11.8)		(6.2)
Incr. Hotel Tax	(0.6)	(0.4)	(0.4)	(0.4)	(0.4)	(0.5)	(0.5)	(0.6)	(0.7)		(4.5)
Maintenance Capital Costs	(5.3)	(5.5)	(5.8)	(6.1)	(6.4)	(6.7)	(7.0)	(7.4)	(7.8)		(21.6)
Net Cash Outflows	(19.9)	(19.6)	(19.6)	(19.7)	(19.7)	(19.8)	(19.9)	(20.1)	(20.2)		(32.3)
Net Cash Flows	(15.9)	(15.6)	(15.4)	(15.4)	(15.4)	(15.4)	(15.5)	(15.5)	(15.6)		(25.3)
Total Undiscounted Cash Flows	(551)										
NPV (\$m)	(283)										

Source: Entrustment report Appendix 3

Financial Case PSC 2 - "DB" (B4)

- 4.11 PSC2 assumes that the Public Sector delivers the construction of the new terminal using traditional procurement methods and retains the operation and maintenance of the airport. This represents a more traditional assessment of the PSC of providing similar outputs and objectives, in the Public Sector as compared to the Government to Government model chosen by the GoB.
- 4.12 The Government's advisors have estimated the cash flows for this case using the following key assumptions.

Table 4.5: PSC2 DB - GoB and its advisors' assumptions

Cash Flow Item	Description
Airport Operating Cash Flows (+)	Represents net cash flows generated by the airport that would be retained by Bermuda. Cash flows have been forecast by the Government under the low traffic growth scenario based on no change in the commercial, operational, or management capabilities of the airport. This has been based on the traffic forecast developed by an international firm (Mott MacDonald).
Borrowing Costs (-)	Bermuda would need to borrow ~\$575 million to finance the development of the airport. The airport development cost is equivalent to the proposal put forward by the third party engineering firm in the 2008 Airport Master Plan.
Incremental Interest Cost on Sovereign Debt (-)	Estimated that borrowing cost for Bermuda would increase by 100bps as a result of credit rating downgrade. Bermuda would incur 100bps increase in borrowing costs across all sovereign debt once the various debt tranches matured
Maintenance Costs (-)	Bermuda would be required to pay for maintenance capital costs for the airport estimated at \$5.0 million per year and escalated by inflation

Source: Entrustment report Appendix 3

4.13 The resulting estimated cash flows are as follows:

Table 4.6: PSC2 DB - GoB Advisor illustrative NPV analysis

Illustrative Net Present Value Analysis – Status Quo (\$ millions)											
	2017	2018	2019	2020	2021	2022	2023	2024	2025		2046
Cash Inflows											
Airport Operating Cash Flows	8.8	7.9	7.7	8.0	8.2	8.6	8.9	9.3	9.7		28.8
Net Cash Inflows	8.8	7.9	7.7	8.0	8.2	8.6	8.9	9.3	9.7		28.8
Cash Outflows											
Project Borrowing Costs	(50.8)	(49.7)	(48.7)	(47.6)	(46.6)	(45.5)	(44.4)	(43.4)	(42.3)		(20.2)
Incr. Interest Costs on Sovereign Debt	(2.4)	(2.4)	(4.2)	(9.2)	(9.2)	(10.6)	(15.9)	(23.4)	(23.4)		(23.4)
Maintenance Capital Costs	(5.1)	(5.2)	(5.3)	(5.4)	(5.4)	(5.6)	(5.7)	(5.9)	(6.0)		(9.1)
Net Cash Outflows	(58.3)	(57.3)	(58.2)	(62.)	(61.3)	(61.7)	(66.0)	(72.6)	(71.7)		(52.6)
Net Cash Flows	(49.5)	(49.4)	(50.5)	(54.2)	(53.1)	(53.2)	(57.1)	(63.3)	(62.0)		(23.8)
Total Undiscounted Cash Flows	(1,369)										
NPV (\$m)	(797)										

Source: Entrustment report Appendix 3

Financial Case- G2G Preferred private concession arrangement (B2b)

4.14 The Government's advisors built up the cash flows to deliver the new terminal under a DBFOM Government to Government contract option with CCC, using the following key assumptions.

Table 4.7: Preferred Option GoB Advisor assumptions

Cash Flow Item	Description
Incremental Hotel Tax Revenue (+)	With an experienced private airport operator, passenger traffic would be higher (base case scenario developed by Mott MacDonald) which will lead to higher accommodation tax revenues compared to the status quo.
Retained Government Services (-)	Bermuda would be required to pay for certain airport operating expenses (i.e. ATC, meteorological, ground electronics, ARFF) under this option. This has been estimated at \$8.8 million per year escalated by inflation.
BAA Annual Costs (-)	Bermuda would be required to set up the BAA to regulate the operations of Project Co. The cost of the BAA has been estimated at \$3.5 million per year escalated by inflation.
Tax concession (-)	The Government has granted several tax concessions to Project Co. The value of these contributions has been estimated at \$50 million and have been presented at the beginning of the Project.
Energy Subsidy (-)	Bermuda would be required to pay for annual energy costs for the airport under this option. This has been estimated at \$2.6 million per year escalated by inflation.

Source: Entrustment report Appendix 3

4.15 Please note that the values used benefit from the negotiations over the past 18 months, and in particular the tailoring of the capital investment costs and scope to meet the GoB's needs. The resulting estimated cash flows were as follows:

Table 4.8: Preferred option GoB Advisor illustrative NPV analysis

Illustrative Net Present Value Analysis – Status Quo (\$ millions)											
	2017	2018	2019	2020	2021	2022	2023	2024	2025		2046
Cash Inflows											
Incr. Hotel Tax	0.8	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6		4.1
Net Cash Inflows	0.8	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6		4.1
Cash Outflows											
Retained Government Services	(9.0)	(9.2)	(9.3)	(9.5)	(9.7)	(9.9)	(10.1)	(10.3)	(10.5)		(15.9)
BAA Operating Costs	(3.6)	(3.6)	(3.7)	(3.8)	(3.9)	(3.9)	(4.0)	(4.1)	(4.2)		(6.3)
Tax Concessions	(50.0)	-	-	-	-	-	-	-	-		-
Energy Subsidy	(2.7)	(2.7)	(2.8)	(2.8)	(2.9)	(2.9)	(3.0)	(3.0)	(3.1)		- ¹²
Net Cash Outflows	(65.2)	(15.5)	(15.8)	(16.1)	(16.5)	(16.8)	(17.1)	(17.5)	(17.8)		(22.3)
Net Cash Flows	(64.4)	(14.3)	(14.4)	(14.6)	(14.7)	(14.8)	(14.9)	(15.1)	(15.2)		(18.2)
Total Undiscounted Cash Flow	(567)										
NPV (\$m)	(317)										

Source: Entrustment report Appendix 3

Government Financial Case Comparison

4.16 The following table shows the key financial performance indicators assumed by the Government advisors for each reference case:

Table 4.9: Financial comparison PSC and Preferred

		Status Quo PSC1	DB PSC2	G2G Preferred
REVENUE	Operating cash flow (2017)	\$4.0m	\$8.8m	-
	Incr. Hotel tax (2017)		-	\$0.8m
	<i>Traffic growth assumptions (airport and Hotel tax revenues)</i>	<i>No growth</i>	<i>Low</i>	<i>Base</i>
	<i>Passenger Fee Assumptions</i>	<i>No change \$52</i>	<i>\$91.75</i>	<i>\$91.75</i>
COSTS	Capex (to be financed)	\$184m	\$575m	\$302m*
	Maintenance capital costs (pa)	\$5m	\$5m	-
	Government services (pa)		-	\$8.8m
	BAA (pa)		-	\$3.5m
	Tax concessions (one-off)		-	\$50m
	Energy subsidy (pa)		-	\$2.6m
	Debt			100bps
NPV (\$m)		-283	-797	-317

Source: Summary of Entrustment Report Appendix 3: Options Analysis

¹² The energy subsidy will only be provided for the first 26 years of the 30-year concession.

* The DBFOM options assume a different project. This figure represents capital expenditures of \$256m and including inflation, contingency costs, builder's insurance and demolition costs.

4.17 Net present values estimates are mainly driven by the capital costs assumed for each option.

- **PSC1- Status Quo:** Capital costs are low, which result in no additional debt costs constraints for the Government and therefore represent the lowest cost option. On the other hand, operating revenues are also low, since the minor infrastructure changes do not meet the desired step change to encourage traffic growth, or increase passenger fees.
- **PSC2- DB:** Capital costs in this option are high, based on the full renovation of the airport as included in the 2008 Master plan. This additional debt results in a substantial impact on Bermuda's sovereign debt costs, and as a result this is the option with the highest cost. In terms of revenue, the improved facilities allow for an increase in the passenger fees and are expected to encourage traffic growth. However, traffic forecasts assume the low growth options due to lack of efficiencies with the Public sector operation.
- **G2G:** In terms of operating revenue, this option assumes a similar increase in passenger fees as in PSC2, however a more efficient operation, and proactive relationships with airlines from the private sector operator is expected to result in higher traffic growth. In this option operating revenue is retained by the concessionaire, however, the increase in traffic also results in incremental hotel tax revenues for the Bermudian Government. This option assumes a much lower capex than PSC2, as a result of the scope optimization process during the negotiation with CCC/ Aecon. Moreover, the financing risk will be transferred to the concessionaire and due to the agreed contractual structure, the Government is not expected to provide any upfront guarantee, and therefore the project will not have any impact on its sovereign debt rating. The Bermudian Government's commitments will be limited to Government services, tax concessions, BAA costs, etc., which will not affect their debt costs.

Limitations of the Government financial analysis

4.18 The financial evaluation of the different alternatives (chapter 3) and the Value for Money assessment (chapter 4) have been based on analysis carried out by the Ministry of Finance and its advisors (traffic, technical, and financial).

4.19 Fundamentally, the key limitation of the analysis is related to the Status Quo and DB options not being directly comparable to the chosen G2G option. Not only the project scopes are different, but also the DB option is built off estimates and schemes that were developed in 2008 and were not optimized taking affordability of the infrastructure into consideration. On the other hand, the much lower capital costs of the G2G option reflects an optimization process, that level of affordability might have not been achieved even with support from expert advisors through a public procurement process.

4.20 In our view, the analysis has been developed professionally but has the following limitations and risks:

Operating Cash Flow Forecasts

- **Risks:** Traffic growth is an important assumption to derive cash flows; either in terms of operating revenues and incremental hotel taxes, but also to determine the potential contributions to the minimum revenue guarantees. The following risks have been identified:
 - **Traffic trends:** Bermuda airport has shown a consistent decline in traffic for the last decade (CAGR: -3.5% 1997 to 2014) due to a variety of reasons including a

deterioration of the accommodation offer and quality and increasing competition for other high end tourism destinations.

The financial forecasts for the selected option assume that the improved customer experience as a result of the new airport facilities and private operation will have a positive impact on demand.

In our view, although the traffic growth assumed in the analysis is achievable, it is not entirely dependent on the airport facilities, but is driven by economic development and is supported by broader measures related to hotel accommodation improvement and rebranding of Bermuda. The costs of which are not included in the assessment. There can be different views on the impact of airport operator on traffic growth. Some believe an experienced private airport operator can facilitate new route development and would put pressure on the GoB to follow through on the actions required to support the reinvigoration of traffic to the island. Others believe the impact of the airport operator would be minimal.

- **Passenger Fees:** The links between the level of traffic throughput and the increase in airport charges is not addressed in the traffic forecasts prepared by CCC/ Aecon's traffic advisors. The report by the Government's traffic advisors does not express an opinion on this issue either. However the Government's traffic advisors have stated that given the cost of accommodation (\$400-\$700 per night), the impact of increased passenger fees would be relatively small and confined to leisure and outbound passengers. We have also been provided with CCC/ Aecon's advisors analysis of benchmarked airport charges under the new arrangements to airports in the region which shows that total airport charges and taxes are comparable to those levied in the Dominican Republic, Bahamas, Turks & Caicos, lower than in Jamaica, and higher than in St Maarten and Cayman.

Although we understand that the additional fees (\$40 compared to the Status Quo) represent only a small percentage of the ticket and accommodation costs, especially given the high percentage of business travelers, there are still some risks regarding the potential impact that this might have on the more price sensitive vacation and Bermudian outbound markets, and how this might affect the air route profitability of operations with relatively high summer peak operations. This is reflected in some of the ongoing discussions about future airport charges strategy with IATA, and concerns expressed by them about the prospect of automatic growth in charges related to CPI, rather than their preferred approach of justified charges based on costs, quality of services and regular reviews (every 3 to 5 years).

It is noted that while the increase in airport charges may have an impact on traffic growth, we observed that Airport Improvement Fees were increased by \$15 in 2016 and traffic has grown during that period.

- **Operating cash flows:** The VfM cash flows developed by the Ministry of Finance and its advisors estimate the operating cash flows under the Status Quo option are \$4m in 2017. This amount assumed no increase in airport fees from today's level and a reduction in the Departure Tax to the original pre-2015 level of \$35. To the extent that GoB would have raised airport/departure tax fees under the Status Quo option, operating cash flow would be understated.

An argument can be made that given airport fees were increased actually in 2015/16, such increase should be included in the PSC1 Status Quo option. We believe that while that is a possible option, we also recognize that the fee increases in 2015/16

were related to cover expenditures for the America's Cup and the development of a new terminal. These revenues would not be applicable to the Status Quo option.

- **Risk on Minimum Revenue Guarantee Contributions:** The benefits of sovereign debt protection of the G2G option are identified, however the risks from use of the Minimum Revenue Guarantee are not. This has some interaction with the previous identified risks associated to traffic trends and airport charges. However, we recognize that the Minimum Guarantee will only be drawn in the event of downside stress case, resulting in levels of annual traffic below what has been achieved in each of the last 15 years. Moreover we recognize that in the G2G model traffic risk is transferred to the operator at traffic levels between the Minimum Guarantee and upside sharing levels. Without the G2G deal, traffic risk would be totally borne by the Government.
- **Risk on loss on revenue:** the Status Quo option assumes the maintenance of the existing terminal, which still retains safety issues related to storms. In the past, this has resulted in the closure of the airport, which would have an impact on the airport revenues. This risk should be addressed in the PSC1 (Status Quo).

Capex Assumptions:

- **Risks:** the significant differences observed in NPVs between the reference cases are mainly driven by the assumptions adopted on the capital expenditures.
 - The Capex assumptions for PSC1 (A1) and G2G (B2b) are supported by independent assessments. However, for the PSC2 (B4) and the other cases (A1, B2a, etc.), the estimates are more crude based on making adjustments to costs prepared for the 2008 Master Plan (with a very different scope and objective).
 - The large differences in the capex between PSC2 (B4) and G2G(B2b) reflect not only differences in the approach but also major differences in the scope of the project, with the CCC/ Aecon proposal including much reduced costs as a result of the project optimization during the negotiation process. These differences cause significant concerns as to their comparability; however, it is understood that this is the only data point available.
 - Although we believe that the estimates produced for B4 are in the high end, we understand that the new scope of work and price as negotiated with CCC/ Aecon has been the result of many months of work and studies carried out by an experienced contractor. This project optimization process is likely to have been more effective than the project specification that could have been developed by the Government and its advisors for a tender process based on the scope of work developed for the Master Plan (B4 or B2a).
 - The G2G option includes a provision of \$50 million for GoB costs related to tax concessions and other potential costs. Separate estimates of the different categories of costs such as custom duty exemption, tax free zone exemptions, and potential loss of electricity rate discounts have not been made. It is noted that to the extent that the tax concessions and costs (e.g., custom duty exemption on capital costs) would have been also applicable under Status Quo and DB then such costs would not need to be included. Nonetheless, there is a risk that the \$50 million allowance does not fully cover all costs.]

Financial Cost Assumptions

- **Risks**

- The increase in sovereign borrowing costs of 100 bps for option B4 (DB) as a result of the increased debt is subject to discussion if lower capital expenditures resulting from a competition allowing variation in scope are assumed.

Other risks

- **Risks**

- While the BAA will be setup to oversee the G2G contract and there are specific provisions in the contract dealing with airport fee increases and operating standards, there can be risks in the implementation of these provisions.

Sensitivity analysis

4.21 In order to provide a better assessment of the risks identified above, we have carried out the following tasks:

- *Interviews* with the Government of Bermuda and its advisors (Traffic and financial advisors), in order to understand the broader measures that the Government is undertaking to reverse the negative trend in tourism and understand how the Government's advisors have assessed the potential impact on traffic and debt costs. Interviews with the Department of Airport Operations were conducted to understand better current operations, revenues and costs.
- We have requested the Ministry of Finance and its advisors to run some sensitivity analysis on the results, to address the risks we have identified above. This analysis has been confined to the GoB's preferred option and the two PSC comparators identified.

4.22 The sensitivities requested are described below and the impact in NPV is shown in Table 4.10

- **Sensitivity 1:** Low case traffic for all options
 - PSC1 (Status Quo): Higher traffic leading to higher airport operating cash flows (and hotel tax revenue).
 - PSC2 (DB): No change to Base Case.
 - G2G: Hotel tax revenue reduced (adjusting for inconsistent assumption).
- **Sensitivity 2:** Stress Case Traffic for all options- Applying the long term trend of -3.5% CAGR to a 2016 base traffic volume. This has been applied to airport operating cash flows, while carrier related revenues have been assumed constant.
 - Status Quo: Decrease in NPV due to lower operating cash flow and tax revenue
 - DB: Decrease in NPV due to lower operating cash flows and tax revenue
 - G2G: Decrease in NPV due to lower hotel tax revenue and Minimum Revenue Guarantee implementation
- **Sensitivity 3:** PSC2 with same Capex as G2G: \$256 (excluding inflation, contingency costs and demolition costs or \$302 million including these items).
 - PSC2 : NPV increased substantially due to the lower capital cost
- **Sensitivity 4:** Passenger Fee increased by \$15 under the assumption that GoB would increase fees even in the Status Quo option.

Table 4.10: Summary of results from sensitivity

Sensitivity	\$m	Status Quo	DB	G2G
Base Case		(283)	(797)	(317)
1	All Low case traffic	(221)	(797)	(357)
2	All Stress case traffic	(340)	(1,044)	(574)
3	DB- same Capex as G2G	(283)	(497)	(317)
4	Fee increase in Status Quo	(209)	(797)	(317)

4.23 The sensitivity analysis shows that the main drivers of differences between PSC2 (DB) and G2G are traffic forecasts but more importantly the capital expenditure assumed.

4.24 PSC1 (Status Quo) is financially better than the G2G option in NPV terms. However government objectives are not met under that option.

Economic Case comparison

4.25 As mentioned in section 3, as well as the strategic and financial objectives, there are a number of economic and social benefits/dis-benefits associated with the different options considered. These include:

- Passenger benefits;
- Wider economic benefits; and
- Other benefits: training, reputational, safety, etc.

Please note that the economic benefits presented in this analysis are symptomatic of the differences in traffic throughput projections used by the Ministry of Finance and its advisors in the cases. Not only is this due to new airport terminal, but also wider GoB initiatives around rebranding of the airport and reinvigoration of the hotel and tourism markets. It is not possible to separate out these contributory factors. In the event that the same traffic throughout was forecast for each option, the differences in economic benefits would be relatively small.

Passenger Benefits

Travel Time savings

4.26 The new terminal in conjunction with other Government of Bermuda actions will encourage the reinvigoration of the tourism industry and attraction of additional air routes to the island to serve tourist and business passengers. Passenger growth will result in an increase of services to Bermuda, which could lead to more direct routings from more destinations on the east coast of the US instead of needing to connect within the United States. This benefit could be intensified with an optimum operation of the airport by an expert airport operator.

Immigration and Security Time savings

4.27 The upgrades included in the new terminal could also lead to some savings in queuing times in both Immigration and Customs and in Security.

- **Immigration and Customs:** going from 10 positions to 12 (6 staffed, 6 “e-gates”), could result in a reduction on queuing time if appropriate levels of staffing are provided by Bermudian and U.S. government authorities. This benefit could double for US travelers (75% of total) that go through US preclearance on the outbound leg.

- **Security:** going from 2 US/1Intl to 6 total positions and with the existing peaking patterns, a benefit could be achieved if operated efficiently by the ProjectCo, with more direct control.

4.28 The travel time savings associated to these impacts are complex to estimate. However, for reference purposes, if we assume a 2% increase the number of direct flights¹³ to Bermuda, a 2-minute saving on customs and 3-minute saving on security, this could result in a NPV¹⁴ of \$54m.

Wider economic Benefits

4.29 Tourism, along with financial services, is a key component of the Bermudian economy. While tourism has declined since the mid-1990s, the per-tourist spend has increased in the last few years by over 20%¹⁵. In 2015 spending per-tourist arriving by air was \$1,177¹⁶.

4.30 The rebranding of Bermuda as a destination, supported by the development and efficient operation of a new airport will be a key component to reverse the existing declining trend of tourism, while continuing to encourage up-market visitors with high associated expenditure on local goods and services.

4.31 The economic benefits of that tourism growth have been measured in terms of the related increase in the **total output** generated by the direct spend of tourists. The following assumptions have been adopted:

- Tourism has been estimated based on the CCC/ Aecon traffic advisor's forecasts (low and base traffic cases), and assuming that the tourism remains as 37% of the total airport demand.
- The estimation of the wider economic benefits have been based on the 2015 spending per-tourist arriving by air (\$1,177), which has been assumed to increase with CPI (2%).
- The total output generated by tourism has been estimated based on the input-output data¹⁷ provided the Government of Bermuda (Department of Statistics), which estimates a

¹³ Assuming 90 minute saving per transfer

¹⁴ Assumptions:

- Travel time benefits have been estimated yearly based on the traffic assumptions for the base case traffic forecast scenario. The benefits have been estimated applying the full benefit to the existing users and using the rule of a half for the new users.
- Travel times benefits have been monetized using the following values of time (US DoT Guidance 2014); \$63.06 for business passengers and \$48.94 for others
- Discount rate: 4.5% (long term borrowing rate)
- Real growth in VOT: 1%
- Evaluation period: 30 years
- Ramp up assumptions: it has been assumed that the benefits will be obtained gradually, achieving the full time saving benefits by 2022.

¹⁵ Bermuda Tourism Authority, 2015. *Advancing the National Tourism Plan: 2015 Update*.

¹⁶ <http://www.gotobermuda.com/bermutatourism/Advocacy/Economic-Impact/>

¹⁷ Input-output models are certainly one of the most commonly used tools for economic analysis, and they are used extensively to conduct economic impact analyses. In this instance, the model is used to compute the total economic impact of a given economic stimulus, including the direct economic impact

total output of \$2.06 for every \$1 spent directly by tourists on activities such as hotels, restaurants or leisure. This assumes an indirect and induced effect that generates another \$1.06 in additional expenditures on supplier industries.

- 4.32 Based on these assumptions, the resulting NPV differential benefits in terms of total output compared to the PSC1 (status quo) are as follows:

Table 4.11: Economic Benefits-Total output generated by the direct spend of tourists

NPV (\$m)	Status Quo (no traffic growth)	DB (Low traffic case)	G2G (Base traffic case)
Economic Benefits- Total Outputs	-	981	2,532

- 4.33 We cannot calculate the employment effect using the Bermudan input-output data as they do not generate employment coefficients. However, input-output data for a similar county in the United States (population and industrial structure comparable to Bermuda's), estimates that 58% of this spend is related to employment wages (Source: United States Bureau of Economic Analysis (BEA)¹⁸). Using this methodology, the resulting NPV differential benefits in terms of employment wages compared to the PSC1 (status quo) are as follows:

Table 4.12: Economic Benefits- Employment wages generated by the direct spend of tourists

NPV (\$m)	Status Quo (no traffic growth)	DB (Low traffic case)	G2G (Base traffic case)
Economic Benefits- Employment Wages*	-	276	713

* Note: Employment Wages benefits are part of the overall Total Output estimated in Table 4.11

Other Benefits

- 4.34 Other benefits would be expected with the construction of the new terminal related to the local specialized employment training benefits, reputational and safety benefits.

Employment and training benefits

- 4.35 We understand that CCC/ Aecon have undertaken to prioritize employing local Bermuda labor and business in the delivery of the new terminal. They expect to fill approximately 60% of the estimate 400 plus construction jobs with Bermudian labor. CCC/ Aecon has also undertaken to run a 6 months internship program for seven Bermudian construction professionals (Engineers and Architects).
- 4.36 Airport operations and BAA staff levels are expected to increase from existing DAO staff levels and staff are expected to be transferred from DAO on the same employment terms.
- 4.37 There have been concerns raised about the current L.F. Wade airport terminal's working environment where it has been reported that sewage systems are inadequate, and leaks in the roof promote the growth of mold. This would be addressed in the new terminal.

of spending as well as ancillary activity on industries providing supporting goods and services. For tourism, spending by visitors will directly impact hotels, restaurants and leisure activities, but indirectly transportation, cleaning services, accounting firms, banks, supermarkets, etc..

¹⁸United States Department of Commerce, Bureau of Economic Analysis, 1997. *Regional Multipliers: A User Handbook for the Regional Input-Output Modeling System (RIMS II)*. Washington, DC: US Government Printing Office.

Reputational benefits

- 4.38 Improving the infrastructure of the airport, alongside the rebranding of Bermuda as a tourism destination and reinvigoration of the Hotel stock on the island has the potential to underpin an improvement in the reputation of the island as tourism and business destination.

Safety benefits

- 4.39 The GoB have identified safety concerns with the current airport terminal, particularly in relation to the ability to withstand category 4 storms and the integrity of the terminal's roof. Building a new terminal would improve this situation.

Conclusion

- 4.40 Based on the CCC/Aecon advisor's traffic forecasts (that have been independently verified by the Government's advisors), significant economic benefits are expected with the construction of the new terminal, especially under the base traffic growth assumed for the G2G option under private operation.
- 4.41 However, it is worth noting that these incremental benefits are **not only** related to the development of the terminal or its optimal operation, but it is mainly related to the overall success of the strategy of the Bermuda Government to encourage tourism growth, which also includes the promotion of new hotels, tourism branding of Bermuda, etc., for which costs are not taken into consideration.

If the G2G traffic was similar to those traffic assumptions adopted for the DB (low case), the resulting benefits would be similar than under the Public Operated option.

5 Benchmarking to other airport transactions

Introduction

- 5.1 In this section we compare some of the key features of the proposed transaction to trends in the airport infrastructure market. While comparisons are available, it needs to be noted that with its relatively low passenger throughput of around 0.8 million passengers per annum, there are few close comparators for Bermuda.

Key areas for comparison

- 5.2 Based on our review of the documentation made available by the GoB, we consider market trends in the following key areas:

- Key drivers for private sector involvement from Government;
- Retained sovereign ownership of assets and land;
- Private sector operating model chosen;
- Length of Concession;
- Construction term;
- Airport Infrastructure Fee introduction or increase (to fund the deal);
- Minimum revenue guarantee or equivalent;
- Transfer of capital cost and timing risks;
- Return on Equity;
- Regulatory oversight/ performance regime in concession agreement; and
- Residual role of Government in providing some services at the airport.

What comparators

- 5.3 As discussed above, we assess that the circumstances surrounding Bermuda's airport redevelopment are not precisely replicated elsewhere: the passenger throughput is small (0.8 million), the capital expenditure required is high relating to the safety and resilience requirements of the island. However, we do assess it is possible to compare market trends and have chosen the following as comparators:

- P3s in US – San Juan, Denver, LaGuardia.
- Central and South America, Caribbean: Santiago, Cuba, St Lucia.
- Other Small airports in the US.

Table 5.1: Table summarizing comparisons

Name	Key drivers	Retained for Sovereignty	Model chosen	Length of Concession	Construction term	Fees	Guarantees
San Juan	Budget deficits, need for investment	Land and assets	DBFOM: Operate and lease under PPP	40 years	Variety of capital projects not new terminal or runway, renovation in first 3 years	No material increase	Aero revenues fixed through airline agreement
Denver	International experience and ideas to upgrade terminal	Land and assets	Concession contract to cover the design, construction, finance, operation and maintenance of the project.			To be determined following initial scoping phase	
LA Guardia	Replace Central Terminal building	Land and assets	Design, build, manage and maintain LaGuardia's Terminal B under PPP	35 years	6 years	No material increase	Aero revenues fixed through airline agreement
Santiago, Chile	Roll over Concession with expansion of terminal \$950 million	Land and assets	Management Contract	20 years	N/A	In Concession Agreement	N/A
Cuba	Modernization of airports in anticipation of increase in international tourists (particularly US)		Concession – details to be decided	Not decided			
St Lucia	Operational improvements and infrastructure redevelopment	Retain ownership of all assets	PPP plan was developed with IFC for agreement which legally binds the private concessionaire to financing, constructing, operating and maintaining the airport	30 years		Possibility of airport development fee being considered	

Name	Capital cost risk	Return on Equity*	Regulatory oversight	Residual role of Government
San Juan	Transferred	N/A	Not significantly changed	Oversight, security, Air Traffic Control
Denver	To be agreed			
LA Guardia	Transferred	N/A	Not significantly changed	Oversight, security, Air Traffic Control
Santiago	Transferred	N/A	By Concession	
Cuba	To be agreed			
St Lucia	Transferred	N/A	By Concession	Regulatory oversight Share in revenues

In addition, there are similar arrangements in place in Quito to those proposed in Bermuda

*Return on equity included in concession agreements is commercially confidential. However, based on our experience the range lies between 10% and 20%, with higher values related to higher risk projects.

Experience from smaller airports in the USA

- 5.4 Most smaller airports in the USA do not operate under concession or PPP, however the capital costs can be benchmarked. Some recent examples of expansion or refurbishment of terminals include:

Table 5.2: Selective US small airports experience

Airport	Total Pax	Terminal	Cost	Cost per Sq Ft
Houston Hobby	11m	280k sq ft	\$146m	\$521
New Orleans	10m	650k sq ft	\$826m	\$1,270
Charleston	3.4m	270k sq ft	\$200m	\$740
Myrtle Beach	1.7m	274k sq ft	\$117m	\$430
Wichita	1.5m	273k sq ft	\$160m	\$586
Minot ND	280k	121k sq ft	\$84m	\$694
L.F.Wade	0.8m	276k sq ft	\$302m	\$1,090

- 5.5 While exact comparisons are difficult as the scope is likely to be different, on the face of it this would mean that the close to \$300 million cost of the L.F. Wade project is towards the top end of benchmark. Given the need to import key labor and materials, this is not altogether surprising.

Overview

- 5.6 The structure of the proposed G2G deal is similar to market trends in that it is built around a concession agreement transferring capital, maintenance and operating risks to the private sector. The length of concession varies between 20 and 40 years and Governments usually retain land and assets rights and provide some services and regulatory oversight.
- 5.7 Key difference is that there has been a tendency to benefit from market competitive tensions. However, there have been some noticeable failures in Jamaica and progress on deals in St Lucia and the Bahamas is also not clear, even though structured competitions took place.
- 5.8 In this case, the Government of Bermuda has relied upon highly experienced advisors to undertake the negotiations with CCC/ Aecon and provide a surrogate for competition.
- 5.9 It is not clear whether the costs of the advisory services to support the bilateral negotiation will be any different to the costs of running a full competitive tender. However, the likelihood of success of a negotiated deal is expected to be higher than under a competitive tender, given the small size of the airport and recent experience in the region.

6 Conclusion

6.1 Based on our review of the circumstances, analysis of the strategic and financial case and estimate of the economic impacts, the Government's chosen option (G2G) represents value for money when compared to the two Public Sector Comparators (PSC 1 - Status Quo and PSC2 - DB)

- The G2G option performs best in relation to strategic alignment with the GoB's objectives.
- The G2G option is better than PSC2 (DB) in the estimated financial cost to the Government. While PSC1 (Status Quo) is the least cost option, it does not meet the strategic policy objectives and carries operating risks.
- Sensitivities were conducted for a number of assumptions, including traffic and capital expenditure used in the financial analysis, and the results shows the G2G option's financial ranking is unchanged.
- The G2G option performs best from the economic case, based on the higher traffic forecasts assumed by the GoB and its advisors.
- The project is expected to generate strong economic benefits, including tourism, employment, as well as passenger benefits related to the better infrastructure provided. However, the estimates of economic benefits are highly dependent on the underlying traffic forecast and the benefits do not accrue solely to the airport project.
- We have conducted a benchmark exercise and observed that the proposed transaction is consistent with comparable airport transactions. Moreover, the chosen model, addresses some of the risks of delayed or cancelled tender processes elsewhere in the Caribbean region.

A Request for proposal Scope of work.

**The Bermuda Government
Ministry of Finance
Request for Proposal for Value for Money Assessment Report Consultant
September 2016**

Introduction

Through this Request for Proposal ("RFP") the Bermuda Government is seeking to engage a firm (the "Consultant") with experience in business case and value for money analysis for major transportation projects and public-private partnerships ("P3s") to provide independent assistance on the preparation of a Value for Money Assessment Report ("VFM Report") for the Bermuda Airport Redevelopment Project (the "Project").

Background and Objectives of this Assignment

L.F. Wade International Airport (the "Airport") is the only airport serving Bermuda. The existing airport facilities have come to the end of their useful lives and do not provide for efficient airport operations. The facilities cannot support traffic growth potential with the appropriate level of service to passengers.

The Government of Bermuda ("Government") has entered into negotiations with the Canadian Commercial Corporation ("CCC") and Aecon Concessions (collectively the "Concessionaire") for the financing and construction of a new terminal and other necessary facilities to accommodate the forecasted growth in traffic, and for the concession of the operation and maintenance of the airport facilities for a 30-year term (the "Proposed P3").

Negotiation of the terms and conditions of the Project Agreement is expected to be substantially completed in September/October 2016, with signing of the Project Agreement planned for the end of 2016.

The Government is seeking to engage the Consultant to conduct an independent assessment of the Project with respect to value for money and to prepare the VFM Report. The VFM Report should include, at a minimum, the following:

- An overview of the Government's objectives for the Project
- A summary of the process leading to the proposed transaction
- A summary of the Government's rationale in proceeding with the selected approach
- A quantitative and qualitative comparison of the Proposed P3 with a Public Sector Comparator
- An analysis of economic and social benefits of the Proposed P3. Such analysis will include, but is not limited to, the benefits of local employment, skills and training, increase in tourism, and increase in business confidence.
- An assessment of the VFM of the Project.

The VFM Report to be prepared by the Consultant is expected to be one of the reports amongst a number of Entrustment Reports to be prepared by the Government. As part of the constitutional authorization and delegation from the U.K. Government to the Government of Bermuda to enter into a contract with CCC, the Government has worked with and agreed with the Foreign & Commonwealth Office ("FCO") of the U.K. Government on various reports to be prepared by the Government. These reports include topics such as strategy case, procurement strategy, and financial comparison of options, are collectively referred to as Entrustment Reports.

The Government is currently preparing the Entrustment Reports with assistance from its legal, financial, technical, and project management advisors. The Consultant is expected to be working in parallel with the Government and its advisors and will have access to the work that has been or will be completed.

The work to be performed by the Consultant is expected to include, but is not limited to:

- Review of project documentation
- Conduct interviews with Government of Bermuda representatives (including Department of Airport Operations, and Ministry of Finance) and advisors
- Review relevant financial information including financial projections under different project options prepared by the Government and its advisors
- Conduct research and analysis as needed
- Develop an independent assessment of the VFM of the Project

Deliverables and Timing of VFM Report

As indicated above, the Consultant is expected to work in parallel with the Government's advisors. The various Entrustment Reports are in different states of readiness at this time. It is expected that a full first draft of most Entrustment Reports will be available by September 23, 2016.

The Consultant will be required to work closely with the Government and its advisors to prepare a VFM Report according to the following timeline:

- First Draft by October 5, 2016
- Second Draft by October 14, 2016
- Final Draft by October 28, 2016
- Final Report by early November

Proposal Submission and Selection

Respondents are required to submit concise proposals addressing the following selection criteria:

Selection Criteria	Submission Requirement
Respondent Qualifications	Qualifications, capacity and experience of the project team and personnel assigned to carry out this engagement. Demonstration of experience in business case and VFM analysis for major transportation projects and PPPs.
Understanding and Approach	Project understanding and approach to executing the engagement.
Price Proposal	Fixed price for the scope of work and deliverables described above and hourly rates for additional work if required by Government.

Respondent's submission should be no more than 10 pages single-sided (or 5 double-sided pages).

A Government selection committee will evaluate each response to this RFP and the Respondent with the best overall proposal will be selected at the sole discretion of the Government.

Instructions to Respondents

Respondents are required to address proposals to and submit one electronic copy in Adobe pdf format to:

Financial Secretary Anthony Manders
Ministry of Finance
Government of Bermuda
2nd Floor
Government Administration Building
30 Parliament Street
Hamilton HM 12
Bermuda
Email: amanders@gov.bm

Please also submit one electronic copy of your proposal to the Project Management Office to the attention of Lori Rockhead at **lorirockhead@kpmg.bm**.

Proposals must be received by 5:00 pm Atlantic Daylight Time on Friday, September 21, 2016. Late receipt of a response to the RFP may result in disqualification at the election of Government.

Any proposal submitted shall become the property of Government and shall not be returned to the Respondent.

The RFP does not commit Government to select any firm, award a contract, or to pay any costs, services or supplies. Government reserves the right to reject any and all responses received as a result of this RFP, or to cancel in part or in its entirety this RFP at its own discretion.

Confidentiality

The content of each response will be held in the strictest confidence. By submission of a response to this RFP, the Respondent agrees not to disclose at any time the contents of any information contained within this document, or any other confidential information disclosed in connection with this selection process.

Conflict of Interest

Respondents should provide information on relationships or engagements with entities that could give rise to a conflict of interest. To the extent the Respondent believes these relationships are not conflicts, it should explain. To the extent the Respondent believes these are manageable conflicts, it should explain how it proposes to manage them.

Contact Person

Should you have any questions related to this RFP, please contact Lori Rockhead at the Project Management Office by email lorirockhead@kpmg.ba or by phone 441-294-2656.

B List of documents provided by the Government of Bermuda

- **Entrustment Reports**
 - Entrustment Report and Appendices
- **Demand forecasts**
 - High level review of Aecon revised traffic forecasts (Issue 13)
 - Market Analysis and Air Traffic Forecasts from Aecon advisors
 - Bermuda phase 2 - Traffic forecast report - Issue 4
 - Bermuda phase 2 - Traffic forecast report - Issue 13
 - Bermuda phase 2 - Traffic forecast report - Issue 16
- **Financial reports**
 - Financial Model- Value for Money Analysis (v4)
 - Bermuda Government L.F. Wade International Airport Statement of Operations FYE March 31 2016
 - DRAFT - Financial Impact Memo - July 20v2
- **Project Info**
 - Airport Redevelopment Options- Financial Comparison Report
 - Airport_Redevelopment_Project_Procurement_Options_Executive_Summary
 - Proposed Terminal Redevelopment Project description (Aecon)
 - Airport Redevelopment Fact Sheet
 - Airport Redevelopment Project- Scoping for Environmental and Social Impact Assessment
 - Bermuda Master Plan December 2006
 - Aecon presentation for the 4th Bermuda Airport Consultative Committee ("ACC") Meeting, September 16, 2016, Montreal
 - New Airport Terminal Final Reconciled Cost Estimate by Faithful & Gould
 - Section of Master Plan report update HNTB
- **Other**
 - CIBC Presentation of G2G Deal Terms
 - Ministry of Finance diagnostic review on the development and implementation of small capital projects (KPMG)

C List of Stakeholders interviewed

- ***Government of Bermuda- Ministry of Finance***
 - Minister of Finance: Hon. Everard Bob Richards
 - Financial Secretary: Mr. Anthony Manders
- ***Department of Airport Operations (DAO)***
 - Financial Comptroller: Mr. Andrew Morille
 - Commercial Manager: Ms. Jacqueline Horsfield
- ***Government advisors***
 - KPMG
 - Partner: Mr. Paul Lan
 - Senior Manager: Ms. Lori Rockhead
 - CIBC
 - Director: Mr. John Bisson
 - Leigh Fisher
 - Mr. Rob Rushmer

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SDG project/proposal number

23040001

Client contract/project number

RfP September 2016

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Distribution

Client: Ministry Finance *SDG:*
Bermuda

Version control/issue number

Final Report

Date

November 17th 2016



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