

# Barbados

## Four Seasons Hotels, Barbados

### Environmental and Social Strategy

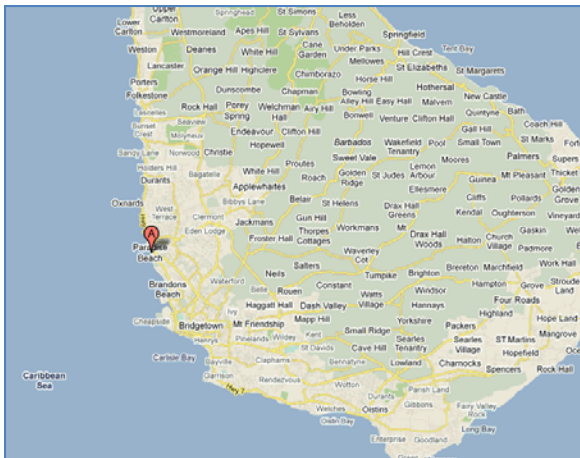
## I. SUMMARY

<b>Transaction Name:</b>	Four Seasons Hotel
<b>Country</b>	Barbados
<b>Transaction Type:</b>	Loan
<b>Sponsors:</b>	Paradise Beach LLP
<b>Total Project Costs:</b>	US\$137 million
<b>Proposed IADB Loan:</b>	US\$52 million
<b>Project Team:</b>	Stefan Wright (Team Leader, CFI/CJA); Peter Stout-King (CFI/CTT); Alejandra Duran Bohme, (SCF/CFI); Hilary Hoagland-Grey (VPS/ESG); and Natasha Ward (VPS/ESG)
<b>Supervisor:</b>	Warren Weissman (SCF/CFI)
<b>Environmental Category:</b>	B

## II. PROJECT DESCRIPTION

### A. Background

- 2.1 The proposed financing is for a 110-key Four Seasons Hotel (the Project or the Hotel) at Black Rock in Clearwater Bay, on the West Coast of Barbados (See Figure 1). The Hotel is part of a larger, partially-constructed project, the Four Seasons Resort and Private Residences (the Resort), development of which stalled during the recent financial and economic crisis. Given the large size, location (northwest of Bridgetown on a prime piece of beachfront) and close identification of the Resort with the Government of Barbados's (GOB) strategy to raise the luxury profile of the Island's tourism offering, the GOB intervened in the development in early 2011 providing a guarantee for limited interim



**Figure 1. Location of the Four Seasons Resort and Hotel Project**

financing to restart the project. IDB support for the Hotel will enable completion of the overall development and avoid further damage to Island tourism industry's reputation. The Resort also includes the construction of 21 luxury villas, 20 apartments and 12 townhouses on an adjacent site north of the Hotel.

## **B. Project Description**

- 2.2 The Project is located on a 32-acre site in Black Rock on the West Coast of Barbados at the junction of Highway 1 and Spring Garden Highway, known as Paradise Beach. The property, which is on the coast, was purchased by Paradise Beach LLP (The Company or the Sponsor) from Cunard in 2006 and is the amalgamation of eight plots of land. The previous uses include a rum distillery, a hotel, residential and fuel terminal for Esso.
- 2.3 The current development plan for the Resort includes a hotel component and a residential component, although the proposed IDB financing is only for the hotel only. The hotel component includes the construction of a hotel of 110 keys with a high proportion of luxury suites; a luxury Spa; 1 adult and 1 children's swimming pool, ballroom and conference facility; three restaurants; and retail outlets, fitness centre and training facilities. The residential component includes the construction of 21 Villas each with their own pool, 20 apartments and 10 penthouses plus 12 town houses, with a shared swimming pool, if possible.
- 2.4 The Resort will require considerable infrastructure and utility services, however advanced discussions with the local utility suppliers have established that suitable service can be obtained with little impact to the Island. As part of the development, a Waste Treatment Plant (WTP) will be installed on-site since the planned upgrade to the municipal West Coast sewer is on hold indefinitely. If the sewer upgrade is completed the Resort will subsequently have to connect to it, as a statutory requirement.
- 2.5 The development will have a district cooling plant to increase the efficiency of providing air conditioning to living and working spaces. Production of the cooling will be through a water cooled chiller system. However, if additional funding is available to establish feasibility and cover increased capital costs, the Company may consider three more sustainable cooling options, sea water cooling geothermal by using bored wells to access ground water, and induction cooling, which would use excess heat from the Barbados Light and Power, a power plant located close to the site.
- 2.6 Electricity requirements will be provided via a new sub-station directly connected to the mains supply from Barbados Light and Power. Electricity in Barbados is generated through oil combustion and steam driven turbines and as a result the cost of electricity is both high and subject to oil price fluctuations. Service interruptions are above normal and can result in prolonged power shortages; therefore an on-site back-up diesel generator will be required. Gas for the development will be supplied via the main along the highway and will not have a major impact on the national supply.

- 2.7 Potable water will be provided from the main running in the highway adjacent to the site. Water is subject to rationing during droughts and as a result the supply of water may be interrupted. Furthermore, given that the Resort will use a water cooled chilling solution a reverse osmosis desalination plant will be required, in order to minimize the potable water requirements. This solution may also be adopted independently of the cooling solution, to minimize the Resort's reliance on the national supply during droughts. The water required for the swimming pool is being reviewed including consideration of the option of a combination of the desalination plant and treated rainwater harvesting. Additionally, the swimming pool design will take into account the need to increase water efficiency by ensuring they are located in shaded areas to minimize evaporation, ensure splash troughs drain back into the pool system and implementing a sustainable maintenance regime. Rainwater harvesting and utilization of treated grey water from the water treatment plant will be used for irrigation.

### **C. Construction activities**

- 2.8 The Resort is being developed by the Paradise Beach LLP (The Company or the Sponsor). Construction is due to restart soon (subject to financing arrangements). After acquisition in 2006, the development team began the demolition and site clearance, and begun a sales and marketing campaign, which resulted in pre-sales of several villas. Design and construction commenced and 16 villas were under various stages of construction in February 2009 when due to cash flow issues during the global financial crisis, the project stalled. In October 2009, a new independent management team was appointed and worked with the GOB on a rescue plan, which included the GOB providing a government guarantee enabling construction to resume. In July 2010, the guarantee was executed and in two months later a credit facility was signed with ANSA Macal a Trinidadian Merchant Bank.

### **D. Operation Activities**

- 2.9 The Resort will be operated partially as a hotel and partially as a residential facility where individuals purchase villas/penthouses from Paradise 88 Ltd, who then design and construct them. The villas can then be placed into a rental pool and rented to hotel guests. In addition, resort support facilities such as the restaurants, swimming pools, and other facilities will be operated by Four Seasons for use by both owners and guests.

### **E. Schedule and Workforce**

- 2.10 The Hotel development will take approximately 3.5 years with the first year being spent on design and the balance on construction. The key milestones and typical durations have been established in conjunction with the Four Seasons development team, based on their experience of delivering hotels around the world. Requests for proposals were issued in May 2011 for the Architect, with Landscape Designer and MEP engineer to follow. This will allow master planning to commence as soon as funding is secured. An August 2011, start for design would result in a 4th Quarter 2014 opening for the Hotel.

- 2.11 The workforce for the construction will initially be supplied by Barbadian registered contractors and sub-contractors. Some special unavailable skills may need to be sourced from the wider Caricom region or further afield. Currently unemployment in the construction sector is reasonably high, but at the same time the demand for larger contractors is high, and these firms have absorbed the majority of the skilled work force on other projects in Barbados including a residential marina, office buildings, and numerous hotel renovations. This has the potential to impact the project schedule, given the need for skilled workers. To that end the Company is looking at the creation of partnerships with the Barbados National Vocational Board and the Development to set up an apprenticeship program for the Resort development, to ensure that the skills shortage is addressed.
- 2.12 The completed Hotel will employ approximately 350-400 direct full time workers. Four Seasons will recruit and begin training staff, approximately 6 to 8 months ahead of the hotel opening. Four seasons have already identified several Barbadian nationals working for Four Seasons overseas, and hope to encourage them to return to Barbados and take up positions. Four Seasons will target Barbadians with no, or limited, hotel experience and train them for the required positions. Four Seasons are a preferred employer and have extremely high staff retention rates. A training program will be undertaken by Four Seasons management and staff to ensure high service standards.

#### **F. Project Alternatives Analysis**

- 2.13 The Resort is being developed on an area previously used for tourism and other commercial development (including fuel storage for an Esso facility). No other sites in this area of Barbados were considered as there are no other available sites large enough for a resort of this kind. The alternatives analysis has, therefore, focused less on location, and more on how the Resort will be designed, constructed and operated. A fundamental element of the Resort master plan is incorporating energy and other low impact elements into the design, such as energy efficient heating and cooling systems and construction materials; water efficiency programs and the reuse of gray water for irrigation; as well as other design and operational measures. Solar power is being considered for certain areas of the Resort. In addition, other options are being evaluated for further energy reduction such as cogeneration using excess energy from the Barbados Light and Power Plant to save on heating and cooling energy costs; a sea water cooling option; and a geo-thermal cooling option.

### **III. INSTITUTIONAL AND REGULATORY CONTEXT**

#### **A. Compliance with National Environmental Assessment and Permitting Requirements**

- 3.1 Barbados has an Environmental Protection Department, which was established in 1971 and operates under the Ministry of Family, Youth Affairs, Sports and Environment. The Department is the pollution prevention, sampling, monitoring and control department and is responsible for the monitoring and control of conditions likely to affect the quality of

land, air and water and the general health and environmental well-being of the inhabitants of Barbados. Its functions are exercised throughout the entire island.

- 3.2 Environmental protection is covered within the Town and Country Planning Act (1985 TCPA), and the Coastal Zone Management Act (1998 CZM, updated recently with IDB support). The TCPA is implemented by the Town and Country Development Planning Office (TCDPO), is the agency that oversees development in Barbados. With respect to planning permissions for new developments, Part IV of the TCPA Planning Control, stipulates the requirements for “building, engineering, mining, or other operations” in Barbados. Except for development in the coastal zone management area, planning permission may be granted through a development order for an area of the country by the Chief Town Planner. Planning permission by a development order may be granted unconditionally or subject to specified conditions and limitations. According to the TCPA, the requirement of such assessment is mandatory where part or all of the development or use of land is proposed in a coastal zone management area.
- 3.3 The Coastal Zone Management Unit (CZMU) performs a variety of coastal management functions to ensure the effective management of the coastal resources of Barbados. It stipulates policies, strategies and standards for the development and maintenance of structures in the coastal zone management areas, as well as the standards for an EIA for development activities that may affect coastal resources. The CZMU also establishes regulations for water quality in coastal and marine areas to affect the maintenance, rehabilitation and enhancement of coastal and marine habitats. The GOB is also establishing a National Disaster and Emergency Management System to ensure that disaster management policies and strategies become an essential part of the national development and planning process.
- 3.4 The construction of the Resort including the Hotel is subject to the planning, permitting and EIA requirements of the GOB. As the property was previously a hotel, there was no requirement for an EIA, however several environmental conditions formed part of the approval, in particular related to the level and type of waste water treatment and disposal including its use for irrigation, maintaining public access to the beach; protection of the marine environment from waste water and waste; and drinking water quality. The Company must also protect beach vegetation between the high water mark and a 100 foot setback. No additional permits are required for the Project by the TCDPO, and the Company has stated that it has received all TCDPO required approval. As such the Hotel as proposed is approved for development in principle; however the new designs are pending re-submission for the final and formal approval.
- 3.5 In addition, over 30 different pieces of national legislation or policy, relevant to all or some of the Resort development have been identified. These are focused on the areas of tourism, labor, environment (focusing on marine and coastal protection), land development and town planning, and occupational health and safety. These are discussed in the Environmental Analysis prepared by the Company (see 3.8), and compliance with these requirements will be evaluated during the environmental and social due diligence (ESDD).

- 3.6 In terms of community impacts, a Social Impact Assessment (SIA) was carried out in 2006, ahead of the planning approval, which focused on the local community's views of the Resort, but which also identified several potential impacts and mitigation measures. These are discussed in Section IV.

## **B. Compliance with IADB Safeguard Requirements**

- 3.7 The key Directives of the IDB Safeguards and Compliance Policy (OP-703) that apply to this project are B.5 (Environmental Assessment), B.6 (Consultation), B.9 (Natural Habitats and Cultural Sites), B.10 (Hazardous Material), B.11 (Pollution Prevention and Abatement), and B.12 (Project under Construction); as well as the Disaster Risk Management Policy (OP-704), and the Disclosure of Information Policy (OP-102).
- 3.8 Although no EIA was required for the Resort an Environmental Analysis (EA) was requested by the IDB for the Hotel development, to focus on the specific key environmental and social aspects and their management and mitigation measures. The EA is currently in draft form and being finalized by the Company for publication on the IDB's website. The initial indications from the EA, and other available Project information, are that there is the potential for minor to moderate impacts, primarily related to beach and marine habitats, including sea turtles, water and other resource availability; and typical hotel construction and operation impacts. It should be noted that this beach is not currently, and has not historically been, a turtle habitat. These impacts are discussed further in Sections 5.24 to 5.26; however indications are that these impacts will be limited in nature, and that the Project has planned adequate mitigation and management measures, which will be further assessed during the ESDD. Based on this information, the project team proposes an environmental impact classification of "B" for the project in accordance with OP-703.

## **IV. ENVIRONMENTAL AND SOCIAL SETTING**

- 4.1 Information on the environmental and social setting is based on the draft EA as well as a Social Impact Assessment prepared at the request of the TCDPO as part of the planning and development approval submission. This document details the public consultation carried out with the immediate community surrounding the Resort and additional information about the development. A summary of that information is included in the discussions below.

### **A. Environmental Setting**

- 4.2 The 32-acre site is located on the last developable area of any significance on the West Coast of Barbados, in Black Rock. The site is located at the junction of Highway 1 and Spring Garden Highway. The property was purchased from Cunard in 2006 and is an amalgamation of eight plots of land. The previous uses include a rum distillery, a hotel, residential and fuel terminal for Esso.

- 4.3 The site is bordered by the Batts Rock Park and private residential property on the North, with a natural course on the edge of the proposed site. The site is bordered by Paradise Drive on the south as well as several derelict buildings. On the east side, the site is bordered by Highway 1, Spring Garden Highway and an Esso Gas Station and by the beach and ocean on the west. The beach is known as Paradise Beach historically because of the Paradise Beach Hotel which was based on the property for many decades. The bay is named Freshwater Bay because of the natural percolation of rain water from Cave Hill into the ocean giving the water a low saline content, which has contributed to its attraction as a tourist destination and swimming location. Batts Rock Park Facility is adjacent to the site and the public beach access will be maintained through this area and via Paradise Drive, south of the property.
- 4.4 Geotechnical and environmental testing of the site showed that there are some caves and fissures that require stabilization works across the site. This can be done through excavation, minor capping of fissures and compacting marlfill. Environmental testing of the Brownfield lands has indicated low levels of surface contamination which will be removed as part of the development. The proposed site has two natural drainage courses/gullies which funnel excess surface water from Cave Hill into Freshwater Bay.
- 4.5 A survey of the plant life and trees around the property was undertaken as part of the EA which identified several mahogany trees and some vegetation in the gullies. These will be retained and developed as features of the Hotel.
- 4.6 The beach is white sand with deep water close to shore. An existing drainage outlet pipe is slightly unsightly, but is critical to retaining the beach which is eroding. The high water mark has shifted considerably in the last five years. The Company is monitoring the levels and has committed to ensuring that strand vegetation, critical to the beach, is retained and possibly increased, subject to discussions with the CSMU and the National Conservation Committee (NCC).
- 4.7 The beach has Seaside Yam which is an important strand vegetation vine which, through its strong root system, helps to prevent beach erosion during storm conditions. There are opportunities to propagate and plant additional Seaside Yam at the back of the beach to provide beach stability and a natural boundary between the development and the beach, negating the need for boundary walls or fences. Planting Cazzerinas and Almond trees are also encouraged under the supervision of CZMU and NCC. The Seaside Yam and other similar beach vegetation make ideal nesting sites for turtles and are encouraged by the Barbados Sea Turtle Conservation Project.
- 4.8 Barbados is home to a healthy population of Hawksbill and Leatherback turtles, which are listed as Critically Endangered (facing an extremely high risk of extinction in the wild in the immediate future) by the International Union for Conservation of Nature and Natural Resources (IUCN) and they are now protected and monitored throughout the island. Some West coast beaches are nesting grounds for both Leatherback and Hawksbill, as well as the more common Green Turtles, although no nest sites are apparent on this beach itself.

- 4.9 Fringe reef colonies are present in the ocean off the beach, which is part of a larger system that fringes the coast of Barbados. The corals present at the site include some transplanted coral from the construction of the Coast Guard station and dry water dock. Paradise Beach/Batts Rock was one of two locations selected for the relocation of reef and has seen great success in take-up rates, which have helped in maximizing the biodiversity in the area, which is particularly rich in typical fish species. The reefs in Barbados are not only an important recreational resource but also as a barrier protecting the shore from storms. It will be important during the ESDD to understand the condition of the reef, and how this is, and will be, protected from damage from the Hotel activities, both during construction and operation.
- 4.10 The ocean in this area has a lower saline content than other areas of Barbados caused by percolation of freshwater through fissures in the rock from Cave Hill to the ocean. These fissures cannot be blocked without impacting groundwater flow under the site and this has been taken into consideration during the geotechnical assessments and recommendations.
- 4.11 Noise levels from Highway 1 and the Esso Petrol Station are moderately high at the eastern side of the property because of the close proximity to the highway, but it is generally quieter as you move down to the sea and the western boundary. On this basis the master plan has been designed to place any areas of intense activity and higher noise levels to the east of the site. The Company anticipates that the noise levels generated by the Hotel will be low, and that there will not be any impacts from music or other noises on adjacent residential neighbors.
- 4.12 The geotechnical study indicates that the site is a limestone cap, formed by the folding of the sea bed. Over thousands of years heavy rain fall above the site on Cave Hill has cut through the site forming two natural water courses or gullies. Additionally there are a number of caves and fissures which are found across the site, which are also highlighted in the geotechnical study. Remediation work will be completed as recommended in the report. Initially, grouting was considered as a ground stabilization method, however after further consideration the impact on the flow of water under the site, and ultimately the risk of water build up was considered as too high and an alternative solution was found.
- 4.13 A 2009 study on the implications of climate change for water resource management on Caribbean tourism, point to the fact that 98% of renewable freshwater resources are being used in Barbados (Emmanuel & Spence, 2009). As such supplies of water are rapidly reaching their limit. In 1978, Bajans used 10 gallons of water per day, however now the use level stands at 60 to 63 gallons a day for residents and 179 gallons a day for hotel guests. Several factors account for the growing water scarcity. For one, Barbados ranks among the driest countries in the world. Moreover, six out of the past 10 years have been abnormally dry. Despite the near-universal coverage of the public water system, about half of all water production is classified as “unaccounted for,” meaning that it is lost through leakage of aging pipes and other defective equipment, or through unmetered consumption. To compensate for these losses, the Barbados Water Authority has been forced to inject growing quantities of artificially desalinated water into the system.



- 4.14 Natural disasters are a risk for this Project, including those from storm surges, hurricanes, seismic events, and especially land stability and avoiding settlement collapse from the factured ground. As discussed in Section 5.26, a geotechnical study and other engineering reviews have been completed which have identified several geological hazards, mitigation of which has been incorporated into a design that includes provisions to address these issues.

## **B. Social Setting**

- 4.15 This section is based on a Social Impact Assessment (SIA) report that was prepared for the Resort, including the Hotel, in order to determine the socio-economic conditions of the community surrounding the Resort and to determine its potential impacts. Details of this assessment are provided in the EA which, when finalized will be posted on the IDB website.
- 4.16 In summary, the Resort is located in the parish of St Michael, in the area known as Walmers Lodge, which is adjacent to Black Rock Park. The surrounding residential properties are mixed in size and value and this represents the varied and mixed social economic dynamics in the area, which is characterized as having predominantly an established, low to middle income population. To the south east of the Resort the housing areas of Black Rock and Deacons are generally middle to low income residents, as is the area to the east, which additionally has a mixture of small commercial properties and the Esso petrol station. The beach is a popular bathing area for residents, students from University of the West Indies and tourists. The Batts Rock park facility has changing facilities and picnic areas in the area adjacent to the beach, which is a popular weekend and public holiday venue. The beach has a number of mature trees at the northern end, which provide shade to beach users.
- 4.17 In terms of infrastructure, the site is close to Bridgetown and has direct access to the highway. It is 20 minutes from the airport and 5 minutes from Bridgetown. The power station is less than 1 km from the southern boundary of the property and all other utilities are available running along the highway on the eastern side of the property. Landfill facilities are available 10 minutes to the north of the project on the ABC highway near Lancaster, and recycling facilities are centered around Warrens, which is north of Bridgetown and close to the site.
- 4.18 The site was unused for over a decade before the development started in 2006 and the derelict buildings, which no longer exist, were then frequented by vagrants and petty thieves as a hiding place to commit crimes on the beach. The beach front properties to the north and south are generally owned and used by average to higher income residents. The area is also close to the UWI and the beach is frequented by many students.
- 4.19 The commercial enterprises in the area are predominately small with 84% employing between 1 to 20 employees. 56% have been operating in the area for 11 or more years. They have chosen to operate in the area because it is convenient and accessible to them

and their clientele. 64% believe that the proposed development would offer increased business opportunities.

- 4.20 The SIA included interviews of residents in Pile Bay, Walmer Lodge, Freshwater Bay, Batts Rock and Paradise Beach Drive, which provides a good spread of the areas surrounding the project. The age distribution of the residents is generally equal across the age groups; however there is a slight drop in the number of residents in the 46-55 year old range. Other key statistics on the residents in the area include:
- 36% are owner occupiers, with 50% renting.
  - 43% live in homes of timber construction, 39% masonry and timber and 15% in masonry.
  - 60% have resided in the area for over 20 years and 18% for over 11 years.
  - 46% are employed, 36% full time. 21% are students. Only 10% are unemployed.
- 4.21 One third of the sample do not believe that the proposed development will impact on their lives in any way; 17% felt that it would provide job opportunities and a further 28% either do not know how it will impact or gave no response.
- 4.22 The SIA and interviews undertaken with local residents and business owners showed that the benefits of the Resort were widespread and important in providing economic stability to the area. The risks relating to the development were predominately construction related issues such as noise, dust and safety, all of which require mitigation plans, but in general if managed properly and effectively would pose little impact. Previously the Resort had a low level of interaction with the community; however as part of the resumption of the project the Independent Management Team with the support of the Board of Directors compiled the Social Awareness program as part of good corporate governance.
- 4.23 One concern that was raised in the SIA was related to the clearing of vegetation associated with the Resort in 2007, especially given that the area of Batts Rock Park next to the site is the last piece of vegetated park land in the area. However considerable planting of lush vegetation and trees will be key to making this a tropical resort destination, and there is a plan to plant approximately 500 trees across the property.

## **V. ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS**

- 5.1 An EA has been prepared for the Project, which includes an assessment of its environmental and social risks and impacts, and which proposes mitigation and management measures to be used to address these risks and impacts. The EA concludes that the potential environmental and social impacts from the activities to be financed by the Project are generally anticipated as being minimal to moderate, given that the development is relatively small and is on land previously used as a hotel and for other commercial activities and that mitigation and management measures can be used to address them. In particular, a risk from low level contamination from a Brownfield site

was identified in the EA, but the risk is considered low and will be mitigated. This information needs to be confirmed during the ESDD.

- 5.2 A summary of the environmental and social risks and impacts from the Project is presented below along with the mitigation measures implemented or planned.

#### **A. Key Potential Environmental and Social Risks and Impacts during Construction**

- 5.3 **Loss or Damage to Habitats during Construction.** During construction there could be loss of habitats through damage from construction activities or from removal of habitats for structures. In the case of the beach, losing vegetation, especially the plants whose root structure protects the beach, could lead to increased erosion of the beach. In addition, as the beach provides potential nesting sites for sea turtles, although none have been identified, it is important to protect those areas during construction. To mitigate this impact there will be a process during the master planning phase to look at reducing tree removal as much as possible and if necessary, to carryout relocation. In terms of the beach habitat, there will be active protection and replanting vegetation. In addition there will be a program, to plant native vegetation and to protect trees from construction traffic. Monitoring will be undertaken to evaluate the progress of the plans and determine additional needs. The vast majority of the trees and vegetation are outside of the site hoarding, which ensures that they will not be impacted or damaged during the construction phase.
- 5.4 During construction, runoff of sediments or accidentally spilled hazardous materials, even in small quantities, can have an impact on water quality, and can potentially cause reef damage. To prevent this, containment will be constructed around the construction areas, and a weekly clean up conducted to ensure no debris reaches the beach or waterways. Similarly, improper management of solid and hazardous waste could lead to contamination and impacts on site and surrounding habitats. To manage this, the Company has received a copy of the policy on waste management, from the Ministry of Works, which will be used as the basis for a series of hazardous waste safe handling and management policies that will be implemented. Public access to the beach is a right in Barbados, and the Project must ensure that access is kept open. The Project is committed to keeping access open through the entrance in Batts Rock Park and via Paradise Drive.
- 5.5 **Health and Safety.** The EA has identified risks of accidental events that could result in injuries to workers, or spills of fuels and other construction chemicals and waste. The construction of the development will be complicated due to the sloped terrain and compact nature of the site, however there will be no high rise structures or deep basements. Structures will be traditional reinforced concrete and block work superstructures with timber framed roofs. These forms of construction are typical in Barbados and match the skills inherent in the workforce. However, it is recognized that construction poses many risks and therefore a Safety, Health and Environment Management Plan has been created to identify, mitigate and manage the key risks. This plan identifies the key areas of concern through the construction phase and establishes a clear process for mitigation, control and management.

- 5.6 **Labor and Working Conditions.** At its peak the project will employ a construction workforce of between 1,200 and 1,300, and will average approximately 1,000 for a period of over 2-3 years, based on the Company's predictions. This will make the project one of the largest employers in Barbados. The work force in the country is highly unionized and this supports good working conditions and practices in general. Regularized lunch and rest breaks, limitations on overtime working, compensation for over-time working, coolers with ice water at the workplace, paid vacation, National Insurance and set grievance procedures are widespread within the industry and agreed upon with the contractor's association.
- 5.7 The Project will be procured using a number of local contractors managed by one management firm on the Company's behalf. The workforce will be provided with worker facilities including changing rooms, washrooms, dining room, canteen, drinking water outlets and first aid facilities. By inserting the key requirements for working conditions into the tender and contract documentation, the Company will be able to ensure that contractors maintain the required standards in terms of labor and working conditions. Failure to adhere to these will result in financial penalty for the organization and removal from the approved contractor list for future work elements. In addition, minimum salaries and working conditions will be established in employee contracts as well as within tender documentation for construction contracts. To ensure that workers are able to voice concerns relating to managements dealings with grievances relating to work, a grievance procedure will be established for workers and placed within tender documentation for construction contracts.
- 5.8 **Community Construction Impacts – Dust Noise and Vibration.** Generally the impacts to the community during construction will be minimal, with some positive impacts created through construction jobs. There could be the usual impacts to nearby residents from noise vibration and dust during construction, and to a lesser extent, during operations. These will be managed through the Safety, Health and Environment (SH&E) Management Plan, which will be discussed with the community as part of the long-term communications plan.
- 5.9 In addition to defining process and management and monitoring roles, the SH&E Management Plan further requires the contractors to prepare detailed method statements in a prescribed format for approval before work commences. This is to ensure that the methodology has undergone a proper review and that it provides a robust mitigation against nuisance caused by noise, vibration and dust. The method statements are reviewed by a suitably qualified and experienced person and the work monitored for compliance. Regular monitoring and reporting is also required and any issues raised in regular site meetings.

## **B. Key Potential Environmental and Social Risks and Impacts during Operations**

- 5.10 **Water and Wastewater management.** Water use and water availability are significant issues in Barbados overall (see 4.13), and must be carefully considered when any new

project using water is constructed. The Resort, including Hotel, during peak maximum demand will use approximately 54,065 US Gallons of potable water per day which will be supplied by the Barbados Water Authority main supply. The design of the Project is guided by the Four Seasons Design standards which includes the selection water-efficient fixtures and other water efficiency options. The Resort will connect to the mains however, as discussed in 2.7 there is likely to be a need for additional water provision solutions to meet the water requirements and efficiency measures, particularly for the water cooled chilling solution and the swimming pools. Even with such water conservation methods, water shortages and scarcity still pose a risk to the Project, and to that end the ESDD will focus on analyzing potential impacts of the Project on the local water supply.

- 5.11 The project will have a Waste Treatment Plant (WTP) for the Resort as a whole, which can handle an Average Daily Flow of 144,382 US Gallons per Day. As the site is terraced and the location of the WTP is on the top of the site, the WTP will need to use a combination of gravity fed and pressure forced main. Two pumping stations will force the sewage from the bottom of the site to the top over a distance of 200 m. As part of several water efficiency measures, the treated wastewater (grey water) will be reused for irrigation. In addition, rainwater will be collected and stored in tanks and used for irrigation within the villas and other sensitive areas. Excess rainwater will be treated and used in swimming pools.
- 5.12 Surface water will be managed through a separate drainage system and will be passed down into infiltration wells and transferred into the water table. Surface water from Cave Hill will be managed through the two gullies. This flow will be managed by creating culverts, with infiltration wells and clear passage for disbursement of 50 year rainfall onto the beach and out to sea, in line with Drainage Division and Coastal Zone Management requirements, and in line with the hydrological study undertaken by coastal engineers Baird. The development teams are working with the Drainage Division of the Ministry of Works on this element of work. Minimizing surface water distribution to the sea is critical in reducing water borne infections that may impact swimmers in Freshwater Bay.
- 5.13 **Impacts on habitats.** Once the Hotel is in operation there could be impacts to beach habitats, especially areas that potentially could be used by sea turtles for nesting. The increase in people brought to the area by the Project could cause damage to the coral reef. For the sea turtles, the Company is reviewing guidelines on the impact of light pollution on turtle nesting and will implement measures to address this, which will be evaluated during the ESDD along with other measures to protect the potential nesting areas and the turtles during active nesting periods (April through December). In terms of the coral reef, there are currently no special requirements in the management plan, and during ESDD this will be evaluated further, including potential impacts on the reef from wastewater which may have a higher temperature than the ambient conditions.
- 5.14 **Energy supply and use.** The close proximity of the site to the National Power Station means that provision of the required 11KvA substation and formation of a ring main will provide the required energy supply for the Project. The local power station is oil-fired and with the cost of oil increasing and the environmental impact of burning fossil fuels,

reduction of energy consumption is key. The Company is evaluating several key areas for energy efficiencies such as lighting, laundry, kitchen and the central plant itself. By following the design guidance of the Four Seasons Design Standards, the Company will be targeting further reductions in energy consumption. The Company is also evaluating options such as the installation of photoelectric cells on the roofs of the back of house buildings to help supplement electrical requirements with solar energy.

- 5.15 Other potential energy saving opportunities are also being evaluated, but are in the early stages of development. One is co-generation, which would see the development of a partnership with the Barbados Light and Power, using the induction chillers to harness excess energy in the form of hot water and steam from the power production process to create a chilled water supply. Additionally, the heat from the steam and hot water can be used through heat exchangers to reduce the cost of heating water for the operation of the Hotel. Although there would need to be an additional capital expenditure, there would be considerable annual electricity consumption savings, as well as environmental benefits and improved efficiency of the Power Plant. An alternative to the expensive co-generation solution could be to look at alternative chilling solutions. The two that would appear to be the most appropriate for the Resort are sea-water cooling and geothermal. The various options will be evaluated during the due diligence phase.
- 5.16 For air conditioning operations, Intelligent Thermostats will be used to monitor, control and minimize wasteful use of air-conditioning in the Hotel which will reduce the usage when rooms are unoccupied and switch off the system when windows and doors are open.
- 5.17 **Air Emissions.** There will be limited air emissions from the Hotel. The backup generators will operate only in emergency power outages and during testing every six months. Emissions will be in line with current regulations and, as a minimum, comply with the interim Tier 4 regulations for emissions from generators. Transportation around the site will be by rechargeable golf buggies, to avoid the emissions created by petrol-powered vehicles. Any emissions from the kitchen or laundry will be filtered and treated in line with best practice and North American regulations, as applicable.
- 5.18 **Health and Safety.** During operations there could be accidents to workers and guests that will be managed through the implementation of a Health and Safety Management Plan. These include an incident communication plan, a clear protocol for management of an incident to be shared with all workers and managers, and a disaster recovery contact list created to be distributed. Trained first aiders and a health and safety manager will also be present on-site at all times.
- 5.19 **Life and Fire Safety/Emergency Response Planning.** Fires and emergencies can present significant risks to both guests and workers, and may cause damage to property. Mitigation and management have been considered for both prevention (design) and through response plans. All Project buildings will be designed and constructed in line with NFPA (National Fire Protection Act) and the International Building Code. Smoke detection, sprinkler systems and fire suppression systems will be installed throughout the property, along with fire signage, emergency lighting and other fire safety appliances such as extinguishers and

fire blankets. The sprinkler system will be charged with harvested rainwater held in storage tanks. Hose reels and hydrants will be installed in conjunction with the codes and with liaison with the Barbados Fire Service.

- 5.20 Emergency response procedures will be established between the Hotel Operator (Four Seasons) and an appointed Life Safety Consultant. These guidelines will be displayed in every room and communicated to both staff and visitors. Disaster Recovery Planning will also be critical and to that end a response team and the necessary associated procedures will be developed ahead of the Hotel opening. The Health and Safety Plan, primarily for occupational health and safety for operations is based on the Four Seasons corporate model which is tailored for each hotel by its senior management prior to opening, based on the specific risks and conditions within the property.
- 5.21 **Security.** Violent crime is not an issue in Barbados and as such the purpose of security will be more to deter petty crime, prevent unauthorized guests from the Hotel property and minimize the press's ability to harass the better known Hotel guests and villa owners. Security guards will be employed from the local community as a means to reduce confrontation and provide tourists with a friendly authentic interaction experience, while being able to diffuse any potential security threats. The security of the Resort will not carry or use firearms.
- 5.22 **Community Impacts from Operations.** There is a potential for a lack of social engagement (specifically of the direct community) to make the residents dissatisfied and see the development as detrimental to their society, especially if the community feels their concerns are not being addressed. The Project has had some initial consultations with the community, but will need to develop a long term community engagement plan; the approach for this will need to be developed during the due diligence. In addition, there will be priority given to hiring locally from the communities. The Company is developing a benefit sharing / community development program, which will be evaluated during the due diligence.

### **C. Key Potential Risks and Impacts from Natural Hazards and Climate Change**

- 5.23 The Caribbean is subject to tropical storms and hurricanes throughout the summer months. The Hotel site is bordered by the ocean on the West Coast and as a result is susceptible to storm surges and also potentially tsunamis. Barbados has been the least impacted island from these storms with the last major hurricane hitting the island in the 1950s. A tropical storm hit Barbados in November 2010, however there was no structural damage to the Resort property or partially constructed villas. Nonetheless, future events such as storm surges, high winds and flooding, all pose a potential risk to the Project. In particular there is a risk of damage to the beach particularly from storm surges and erosion and damage to vegetation and beach front property.
- 5.24 The assessment of this risk in the EA concludes that while the probability of such events is fairly low, the consequences could be quite high, and therefore it must be mitigated. To some extent the coral reef that runs offshore of the beach provides some natural protection,

but additional mitigation is required. The planned mitigation measure is to retain and propagate strand vegetation to protect the beach, and to use boulders to protect the beach front retaining walls. To date, strand vegetation has been retained at the back of the beach and the design for bolder protection has been completed. This will use a mixture of 1 to 3 ton boulders wrapped with geotechnical fabric to ensure that waves cannot erode under the retaining wall foundation. Damage to structures, particularly from high winds is a risk during storms. As a result, all buildings are designed to Miami Dade County hurricane standards and a Hurricane Plan has been completed and agreed upon with project insurers.

- 5.25 The site has two gullies which are natural watercourses which divert surface water collected from Cave Hill run off to the sea and these can fill with a torrent of water during prolonged heavy rainfall, washing debris such as trees and boulders out to sea. The impacts from these floods can be serious. In addition, these gullies must be maintained as a condition of the planning approval. In the short term, a temporary soak away has been constructed while permanent culverts are designed. The geotechnical survey identified many caves on the site that may be susceptible to collapse if the appropriate remedial action is not taken. Specific engineering measures have been planned for the various construction phases and will be critical to ensuring ground stability and avoiding settlement/collapse. A detailed action plan is contained within the geotechnical report that forms part of the Project EA.
- 5.26 Potential increases in natural disaster risk, or other risks induced or exacerbated by climate change have not been evaluated and will be reviewed during the due diligence. Key issues to be included are those associated with sea level rise and the location of Project facilities, and also whether flood and erosion assessments, and the associated design considerations are sufficient given potentially different future scenarios for rain fall and intensity in particular.

#### **D. Other risks**

- 5.27 Another potential environmental risk is contamination under old fuel storage tanks on part of the Brownfield site, however the testing of the ground conditions has revealed that the contamination is low level and poses no risk. Nonetheless, the removal of the large storage tanks and top layer of strata is a major milestone for the project and the evaluation of any residual risks to the Project will be evaluated during the ESDD.

#### **E. Positive Impacts**

- 5.28 The EA identified several positive social impacts associated with the Project, including short-term construction and supply based employment; long-term employment, training and career development opportunities in the hospitality sector; increased commerce to adjacent businesses; and improved turnover and secondary employment opportunities.



## **F. Cumulative Impacts**

- 5.29 The key cumulative impacts for a project such as this, is the creation of additional stresses on already limited resources, in particular water, power, and landfill space, as well as sensitive habitats such as coral reefs and potential nesting sites for sea turtles. In addition, there is a limited amount of beachfront property available, and the increasing desire of luxury resort guests to have exclusive rights to the beach has the potential to deny access of others. Barbados has laws requiring beach access for all; however continuous developments can mean this access is, in some cases, difficult even if technically it is provided. This Project is part of a relatively small resort, located on “brownfield” property which is being redeveloped, rather than a greenfield site that would remove unspoiled land. From a sustainable land use perspective, this is preferable to the alternative of a new site. In addition, the Company is evaluating its use of natural resources, and is taking steps to minimize its impact on the habitats on and around the Resort. Also by guaranteeing access to the beach, the Company will be reducing the potential for conflict due to additional reductions in public beach access.

## **VI. ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING**

- 6.1 Most of the mitigation and management measures discussed in this section are contained within the various environmental and social management plans created, or under development for the Project. Environmental and social management and monitoring will be under the control of the Company during the construction phase, but once the Hotel goes into operations, this will be based on the corporate requirements set out by Four Seasons. Many of the plans however, span the life of the Project from construction through operations.
- 6.2 The Company has created a Safety, Health and Environment (SH&E) Management Plan, which defines in detail how health and safety will be managed during the construction phase of the Project. The SH&E Plan contains a manual that outlines the responsibilities of the project team under each of the topic headings of SH&E to the designers, construction managers and contractors. The SH&E Plan supplements the statutory obligations on the Company and the project team. The Company will employ a full time Health and Safety Manager to supervise the construction operations. Contractors will only be able to bring staff on site with appropriate Personal Protective Equipment (PPE) and after completing a comprehensive induction course. Each person on site will be issued with a Disaster Recovery Card giving the contact details of key staff and contact information for security, police, fire, ambulance and other emergency services. First aid stations will be set up in various locations on-site, with clear signage to indicate their location. Contractors and the management team will have trained first aiders so that emergency help can be administered as early as possible.

- 6.3 In terms of construction labor requirements, the Project has committed to set high standards in terms of improving labor practices, safety and working conditions on-site, and is planning certain initiatives such as:
- Contractor awards for contractors who have demonstrated good safety practices;
  - Employing a full time Health and Safety Manager, independent from the contractors, to ensure that SH&E Plan is adhered to and to provide independent reporting;
  - Providing tool box talks and Health and Safety training/education to the work force
  - Working with the government Labor department on educational programs;
  - Enforcing PPE as a basic criteria for entering the site and also ensure that new workers have a full site introduction ahead of commencing work;
  - Daily inspections and a regime of permits, risk assessment and method statements; and
  - Monthly safety audits will be carried out with the labor department.
- 6.4 During Hotel operations, the management plans and procedures will be based on those of the Four Seasons corporate plans. These address impacts and risks covering key aspects of the operations. Examples of these plans and procedures include:
- Fire Safety & Emergency Response Procedures, including natural disasters
  - Occupational Health and Safety, including accident reporting and analysis procedures;
  - Contractor Compliance Program that details how all hotel contractors will comply with Four Season Health and Safety and other requirements;
  - Hazard Communication Program following the U.S. Occupational Safety and Health Administration (OSHA) guidelines, for the evaluation of hazards in the work place;
  - Employee training programs, including hazardous materials handling;
  - First Aid response procedures, including training on the use of the Automated External Defibrillator (AED); and
  - Safe food handling practices, including a Culinary Safety / Health Checklist.
- 6.5 The Project also has in place, or is planning, a series of community engagement and development plans, the details of which will be reviewed during the ESDD.

## **VII. STRATEGY FOR DUE DILIGENCE**

- 7.1 The Bank will perform an Environmental and Social Due Diligence (ESDD) in order to confirm that the Project's direct and indirect, and cumulative environmental and social risks and impacts have been properly assessed, and ensure that appropriate mitigation and management measures are designed for, and implemented during, the life of the project. While the Project financing is only for the Hotel part of the development, the social and environmental aspects of the Resort as a whole will be evaluated, given that the issues cannot readily be separated for a resort constructed and operated in this manner. Specifically, the ESDD will address the following:

## **A. Potential Risks and Impacts**

- 7.2 Evaluation of the adequacy of the Environmental Analysis (EA) of the Development, including the Project to confirm that the relevant direct and indirect environmental and social, health and safety, labor and gender risks and impacts and the cumulative impacts have been properly identified and evaluated (both positive and negative impacts); and confirmation that the completed and ongoing works have not resulted in significant or irreversible impacts, particularly on beach and marine habitats.
- 7.3 Assessment of the overall cumulative impacts of the addition of new resort facilities in this area of Barbados, and the resulting stresses on the availability of resources, in particular water, and on natural habitats such as sea turtle nesting beaches and the coral reef.
- 7.4 Assessment of other risks such as geotechnical hazards, existing liabilities from the Brownfield site (especially fuel tanks), and natural disasters.
- 7.5 Assessment of climate change induced risks for the Project, particularly in relation to the vulnerability of coastal structures to increased intensity and/or frequency of extreme weather events and sea level rise.

## **B. Compliance**

- 7.6 Assessment of the current compliance of the Project with the applicable country's (national, provincial, municipal, local) environmental, social, health and safety, and labor regulatory requirements (e.g. laws, regulations, standards, permits, authorizations, applicable international treaties/conventions). Included in this assessment will be site-specific legal requirements (e.g. licensing/permitting requirement), international standards and applicable IDB environmental and social policies or guidelines, such as OP-703 Environment and Safeguards Compliance Policy, OP-102 Information Disclosure, and OP-704 Disaster Risk Management Policy.
- 7.7 Evaluation of Project-related information disclosure and public consultation activities that have been performed; confirmation that participation processes of stakeholders have been adequately conducted; and for proposed future actions that the developers provide adequate ongoing information disclosure and public consultation with the local population, in compliance with IDB policies.

## **C. Mitigation, Management, Monitoring**

- 7.8 Confirmation of the adequacy of emergency and contingency plans and procedures designed and to be implemented during all phases of the Project to address potential Project-related accidental events (fires, explosions, natural disasters, etc.); and confirmation that adequate disaster risk management plans are consistent with OP-704.
- 7.9 Assessment of the adequacy of the corporate social responsibility programs and other Project initiatives to improve integration and relationship with the communities.

- 7.10 Confirmation of the adequacy and scope of the environmental and social management plans, procedures and manuals that have been prepared or will be prepared for the Project, including timeline of preparation, approval process, implementation and monitoring arrangements.
- 7.11 Evaluation of the overall Project's environmental, social, health and safety, and labor management policies, systems, and procedures to ensure their technical adequacy in relation to potential site-specific risks and impacts. This includes the evaluation of (i) roles and responsibilities; (ii) the sufficiency of resources for implementation; and (iii) adequate procedures for training, auditing, and reporting.
- 7.12 Assessment of the adequacy of the proposed monitoring measures for the Project including timelines, budgets, and allocation of responsibility for detailed procedure development and implementation. This will also include the determination of key environmental and social indicators and requirements for the project execution.
- 7.13 During the ESDD, the Bank will propose a series of project supervision and evaluation procedures to ensure proper implementation of environmental, social, and health and safety actions and requirements, and will propose environmental, social and health and safety terms and conditions in relevant project legal documents (e.g. construction contracts, operations and maintenance documents, etc.) in terms of sufficiency, potential risks or liabilities, or issues.
- 7.14 As part of the Bank's ESDD process, the Bank will prepare an Environmental and Social Management Report (ESMR) presenting the conclusions of the ESDD for consideration by the Bank's Environmental and Social Review (ESR) group.