

2. DESCRIPTION OF THE PROJECT

Ocean Park Corporation

- 2.1 Ocean Park Corporation, a not-for-profit organization, is an independent body incorporated in Hong Kong under the Ocean Park Ordinance 1987. The Corporation's principal activity is to manage and control Ocean Park as a public recreational and educational park.
- 2.2 Ocean Park's mission is two-fold: 1) To provide local and overseas visitors with experiences that combine entertainment and education; and 2) To assist in the understanding and practice of wildlife conservation.

Project Scope

- 2.3 The purpose of the Project is to upgrade and expand the existing Ocean Park to meet anticipated visitor demands and to position Ocean Park as a premium tourist attraction and a regional leader in themed recreational and educational park experience.
- 2.4 The Project comprises:
- Civil infrastructure works including road works (including modifying sections of Ocean Park Road, which is a local distributor, around the existing bus terminus as shown in Figure 1.1), drain works, tunneling and geotechnical works, bulk excavation and slope works, retaining structures, site clearance, decommissioning and demolition works, funicular railway, modification to bus terminus, taxi stands and associated facilities.
 - Utilities works including power supply distribution, electrical substations, freshwater and saltwater reservoirs, water supply distribution, gas supply distribution, telecommunications network and distribution, landscape irrigation network, etc.
 - Primary life support system works for animal keeping.
 - Area development works including service roads, EVAs, external escalators, bridges and elevated walkways, external lighting.
 - Parkwide systems works including signage, background music system, toilets facilities, guard sheds, first aid facilities, communications systems, CCTV systems and waste facilities.
 - Landscape or theming works including exterior building facade treatment works, themed concrete pavement/ hardscape, soft landscaping, water and faux rockwork features, visual intrusion screens, area props and artwork, etc.
 - Works for the attractions venues including animal exhibits, marine animal, terrestrial animal, aviaries, bird exhibits, individual life support systems for animal exhibits; and other non-animal related attractions, e.g. shipwreck play area, bamboo maze, etc.
 - Installation of rides including thrill rides, round rides, water rides, kids rides, interactive rides, transportation rides, etc.
 - Works for the venues including event halls, outdoor live show area, cinemas and bandstands.
 - Works for the merchandise / retail facilities including souvenir stores, novelty stores, games arcade, photo shops, etc.
 - Works for the food and beverage facilities including restaurants, bakery, food carts and kiosks.
 - Back of house facilities including offices, break areas, warehouses, centralized facilities, operational facilities, etc.
- 2.5 There are also three proposed hotel developments. The hotel developments, however, are not considered as part of the current Ocean Park redevelopment scheme and would be separately implemented in the future. Therefore, the hotel development will not be considered in this Environmental Impact Assessment (EIA).
- 2.6 Based on the latest information, the Project is scheduled to commence in mid 2006 for completion in the 4th quarter of 2011.

- 2.7 The operation hours of the Park would be extended to be 10 a.m. to 10 p.m. daily.
- 2.8 A master plan of the proposed Project is shown in **Figure 2.1-2.2**. A cross-section through the Water Front is illustrated in **Figure 2.3**. **Figures 2.4** and **2.5** show the location of proposed expanded areas.

Previous Submissions

- 2.9 A rezoning request¹ has been made to the Town Planning Board in August 2005 under the Town Planning Ordinance, for the rezoning of areas outside the current Ocean Park boundary, comprising the existing Citybus depot and part of the Hong Kong School of Motoring. At the time of writing, the request is still under consideration by the Board. The application deals with the areas adjacent to the existing main Ocean Park entrance that will be required for the expanded/ integrated main entrance plaza, PTI and car park.

Project Location

- 2.10 Ocean Park, located at Aberdeen on the south side of Hong Kong Island, is built on both sides of a mountain known as Brick Hill (Nam Long Shan). The existing Park has two main visitor entrances – the Main Entrance at the Lowland and the Tai Shue Wan Entrance.
- 2.11 Ocean Park currently extends across approximately 87.9 hectares of which a large part is undeveloped primarily due to the steep topography. The Lowland area covers approximately 15.4 hectares and the Headland area 72.5 hectares. A large portion of the overall site area is natural or semi-natural and mostly vegetated.
- 2.12 The Lowland area of Ocean Park is located at the foot of Nam Long Shan with the Police Training School, Driving School and Bus Depot located adjacent to the front entrance to the park, as well as the Aberdeen Sports Ground just northwest of the park.
- 2.13 The Headland area spreads across the southern part of Brick Hill and has excellent views of the ocean and various islands (Middle Island, Round Island, and others) and the Aberdeen Channel.
- 2.14 The Tai Shue Wan portion of the park (incorporating the Middle Kingdom attraction) is located to the western side of Brick Hill southwest of the Lowland, and faces the Aberdeen Channel.
- 2.15 The park's configuration creates a unique experience due to the geography not found in other parks, with the Cable Car ride and impressive views from the Headland.

Site History

- 2.16 Prior to development of the original park, most of the site comprised open or vegetated hills with no known existing land uses. A few access paths/ roads were constructed, presumably by the military, and some military structures are still in existence. The main entrance and adjacent areas were previously agricultural or other undeveloped lands and the attractions at the Tai Shue Wan entrance have been built also on some reclamation along the coastline. The existing site will be expanded across a currently unused area at Nam Long Shan and also across areas that (in whole or in part) are currently the sites of a Citybus depot and the Hong Kong School of Motoring. Further details and description on site history and previous land uses is contained in the sections on cultural heritage and land contamination.
- 2.17 Ocean Park opened in 1977 and has over time developed into a major regional ocean/ marine-based theme park serving mostly the Hong Kong and Asia markets and has received more than 60 million visitors since its opening.
- 2.18 Ocean Park's annual attendance has ranged from approximately 2.8 to 3.7 million during the last five years with approximately 3.7 million visitors in 2003/04, indicating continued growth in visitor numbers.

¹ "The New Ocean Park: Application for Rezoning; Expansion of Arrival Area and Transport Facilities." August 2005.

Need for and Benefits of the Project

- 2.19 Historically, the core Hong Kong resident market has accounted for the largest proportion (60 percent to 70 percent) of the visits to Ocean Park. Recently, however, the Mainland Chinese tourist market has become an increasingly important segment of visitors. This large tourist market from Mainland China tends to concentrate in three "Golden Weeks". The Chinese New Year in particular is a peak week as both local residents and mainland tourists have the same holiday. This results in extreme peaking, which cannot be fully accommodated in the current park.
- 2.20 The highest number of visitors ever recorded at Ocean Park was 36,300 visitors in a day. This was far in excess of the Design Day, which is 15,000 per day. In 2003/04, Ocean Park experienced 14 days above this capacity. In addition, there is little physical connection between the three main areas of Ocean Park, so there are significant circulation, capacity and visitor flow challenges. The current poor circulation of the park and the relatively few marquee attractions results in excessive crowding even on average days.
- 2.21 There is a clear need to improve the current park's facilities to cope with existing visitor demand. But there is also an opportunity in the redevelopment to improve upon the current park's attractions and to elevate the park's tourism appeal.

Ocean Park's Redevelopment Strategy

- 2.22 The primary strategy of the redevelopment of Ocean Park is to adopt and improve upon the "SeaWorld" theme park concept in order to increase profitability and complement Hong Kong Disneyland. With nearly three decades of operation, Ocean Park has accumulated a tremendous amount of expertise in maintaining high quality marine life attractions. However, the dispersed pattern of attractions, age of the attractions and limited food and merchandise facilities render Ocean Park less competitive, particularly compared with the newly opened Disney theme park. The redevelopment aims at differentiating Ocean Park from its competitors while also increasing the economic viability of the operations. Key strategies include:
- Make Ocean Park "Better than SeaWorld" with the newest attractions, technology, marine design features and facilities.
 - Add new attractions, such as the arctic experience, which are unique to Asia and are expected to generate increased tourism to Hong Kong.
 - Provide new and upgraded food and beverage facilities as well as a range of retail shops and game opportunities.
 - In addition to state of the art marine attractions, offer thrill rides targeting the teenage visitor market.
 - Continue Ocean Park's mission as an educational facility that is updated, more entertaining and appealing to the increasingly sophisticated visitor and resident markets.
- 2.23 The main benefits of the proposed project are in the provision of a park with an enhanced visitor experience and better tourism potential. Also, the improved park will offer new and improved local recreation facilities. More staff will be employed in the expanded park. In addition, environmental enhancements will result from the redesign of the main entrance way and the redevelopment of the Citybus depot and Hong Kong School of Motoring site; further environmental enhancements will be sought in the landscaping and planting around the site.

Project Design & Consideration of Alternatives

- 2.24 The project concerns expansion and redevelopment at the existing Ocean Park site; there are no alternative sites considered. In fact, one of the major attractions of the park is its location and the park designers obviously need to capitalise on this opportunity. Nevertheless, the objective of the theme park designers was to work as much as possible within the existing park footprint to seek improvements and upgrades in facilities and visitor attractions. Where the park usage area is planned to expand, the design has attempted to incorporate and work with the opportunities and

- constraints provided by the site location and topography. For instance, the alternative Headland (“Summit”) access provided by the proposed funicular railway will be aligned in tunnel to avoid environmental impact.
- 2.25 In the course of planning the expansion and redevelopment proposal, alternatives for some of the elements have been fully considered, with environmental factors taken into account, to arrive at the current proposal. These alternatives are described in the following paragraphs.
- 2.26 For the modes of transportation for the visitors between the Lowland area and the Headland area other modes of transport, apart from the currently proposed funicular railway, have been explored. Such alternatives include construction of another cable car system, increased shuttle bus services on the existing roads, a funicular above ground instead of inside a tunnel, at grade road between the Lowland area and the Headland area, a carriageway for vehicular transport inside a tunnel, and ferry services.
- 2.27 Although the cable car system, similar to the existing one, is an environmentally friendly mode of transport, the idea of the construction of another cable car system to replace or duplicate the existing cable car system is rejected as one of the objectives of an alternative transport between the Lowland area and the Headland area is that it has to be able to operate under all weather conditions to maintain the link between the Lowland area and the Headland area. The cable car system, which has to stop operation under high wind condition, obviously is unable to meet this objective. Increasing shuttle bus services on the existing roads is also rejected as this option would generate additional traffic to the existing road network and hence additional traffic noise and tailpipe emission. A funicular above ground would have visual concern and would result in more disturbance to the vegetation in the green belt area between the Lowland area and the Headland area. A new at-grade road would also cause similar disturbance to the vegetation in the green belt area, and at the same time result in generation of traffic noise and emission. A carriageway instead of a funicular railway inside a tunnel would be feasible, but the vehicular traffic generated would equally result in additional emission and air quality issues at the ventilation outlets. Ferry services would require construction of new jetties which would also impact on the coast line and marine environment, apart from the lower capacity of the services. Compared with all these alternative modes for transport, the funicular railway through a tunnel, operating by cables driven by electricity, would result in least environmental impacts in terms of construction and operation.
- 2.28 Currently there is an existing EVA access from Tai Shue Wan leading to the Headland area. Owing to topographic constraints, this access, although capable of being used by vehicles, is very steep and with tight bends at certain locations. As shown in the Project Profile submitted to apply for the Study Brief under EIAO in late March 2005 (Application No. ESB125/2005), consideration was given to construct a new access from Tai Shue Wan up to the existing Headland area, as well as to improve the existing Nam Long Shan Road leading to the Headland area. This new access road, however, would have to pass through a densely vegetated valley between Nam Long Sham Road and Shum Wan Road and would require cutting and filling along its route. Also the modification of Nam Long Shan Road by widening could involve some slope works and stabilization works requiring vegetation clearance and wildlife/habitat disturbance. To minimize impact to the vegetation and to preserve its ecological environment as far as possible, the proposal of new access road construction together with Nam Long Shan Road widening has subsequently been removed from the current proposal. The original scheme presented in the Project Profile (hereinafter referred to as “the original scheme”) is provided in [Appendix 2.1](#) for reference.
- 2.29 The Project will entail expansion of the capacity of the reservoir to cater for increased demands in fresh water and salt water. Under the original scheme, the service reservoir would be located at a high point at the Summit, to the northeast of Nam Long Shan Road. Excavation as well as clearance of vegetation (tall shrubs) would be necessary for the construction of the reservoir. The environmental performance of the original scheme has been improved by relocating the service reservoir such that the reservoir would integrate with the new formed rock slope and be fully within the footprint of formed land within the Summit development. The environmental benefits of doing this are: (1) reduction of tree felling / vegetation clearance (2) minimization of tall shrubland habitat loss (3) minimization of visual impact to Deep Water Bay and Repulse Bay areas.
- 2.30 The alignment of the funicular system of the original scheme leads to a portion of its northern section on viaduct. Clearance of vegetation would be necessary to provide space for the construction of piers for the viaduct. An alternative alignment has been developed for the funicular

system. The whole route of the alternative alignment would be in the form of a rock tunnel with route length of about 1.3km. The viaduct portion of the original scheme would then be no longer required. In so doing, potential ecological disturbances, loss of vegetation as well as visual impacts can be avoided.

- 2.31 When the master layout plan for the expansion and redevelopment was initially conceived, consideration was given to locate new attractions and rides in the sloping areas adjacent to the existing escalators between the Headland area and Tai Shue Wan. This proposal, however, would cause disturbance to the much denser vegetation in the area and require extensive transportation links between the attractions and rides, all located at different elevations due to topographic constraints. In environmental terms, the operation of these transportation links would result in extensive energy consumption throughout each day of operation and hence was not favourable. The idea of further expansion and redevelopment in the sloping areas adjacent to the existing escalators, therefore, was not further pursued.
- 2.32 Further details of construction/ engineering and operational factors adopted in the project to avoid or minimise environmental impacts and to improve the environmental outcome of the project are provided in Section 14 of this report.
- 2.33 The proposed project has been derived with due consideration of all physical, operational, and other constraints, and has been subject to a comprehensive evaluation of planning, engineering, environmental, and cost considerations. The selected design is considered to be the most feasible and practicable. The proposed scheme offers the most efficient and balanced land use arrangement whilst still meeting the needs of the new park.

“Without the Project” Scenario

- 2.34 The proposed project has been conceived and designed to meet a need. Therefore, if the project were not to proceed, there is likely to be certain opportunity cost, as well as consequential adverse effects, as described below.
- The park would reach saturation in visitor numbers and there would be increasing problems associated with overcrowding, especially on peak attendance days. The attraction of the park would be significantly diminished.
 - The park setting and attractions, including rides, animal facilities, etc. would become increasingly dated and also more expensive and/ or difficult to maintain, and consequently park attractiveness may decline.
 - Opportunities to improve tourism in Hong Kong and opportunities for additional local employment would be missed. In addition, the opportunity to provide a fresh local recreation opportunity would also be missed.
 - The Government’s intention to develop Aberdeen as a tourist node and to re-generate the Southern District will be seriously affected.
- 2.35 Development opportunities and constraints have been identified and are discussed fully in each technical section. Where appropriate, the assessment predictions have been compared to the “do-nothing” scenario. However, for some cases there is insufficient information to predict future possible environmental conditions in the absence of the proposed development and so future conditions have been assumed to be no different to existing conditions. In this case, the future development impact has in essence been compared to present-day environmental conditions.

The EIA Assessment area

- 2.36 The majority of the proposed works are located within the existing Ocean Park area at Aberdeen but will also encroach into part of the existing public bus terminus and part of the existing Hong Kong School of Motoring adjacent to the existing Ocean Park.
- 2.37 The Assessment Area for the purpose of this EIA Study, as specified in the Study Brief, is presented below (refer to [Figure 1.1](#)):
- Noise impact assessment study area boundary would be 300 m outside the development limit of the Project.

- Landscape impact assessment would include all areas within 500 m of the development limit of the Project, whereas the visual envelope would define the visual impact assessment study area boundary.
- Terrestrial and Marine ecological impact assessment would include all areas within 500m from the site boundary of the land based works areas or the area likely to be impacted by the Project.
- Waste management assessment would focus on areas within the development limit of the project.
- Land contamination assessment would focus on areas within the development limit of the Project.
- Air quality impact assessment study area boundary would be 500 m outside the development limit of the Project.
- Water quality impact assessment would cover Western Buffer Water Control Zone and Southern Water Control Zone as designated under the Water Pollution Control Ordinance (Cap. 358, WPCO). The study area could be extended to include other areas such as stream courses, existing and planned drainage system, and the associated water system if they are found also being impacted during the course of the assessment and have a bearing on the environmental acceptability of the Project.
- Sewerage and sewage treatment assessment would focus on the pumped sewage discharge to the Aberdeen Preliminary Treatment Works (APTW).
- Cultural heritage impact assessment would focus on expansion areas of the Project.
- Hazards to Life assessment would focus on areas in the vicinity of the Project.

Works Programme and Implementation

- 2.38 The construction works of the proposed project are anticipated to commence on site in mid 2006, with completion of the Project by the 4th quarter of 2011. A construction programme is presented in [Appendix 2.2](#) for reference. The assessments in this report are based on this programme, using reasonable worst-case scenarios and, where necessary, any implications of the programme have been highlighted in the relevant section.
- 2.39 Several stages can be identified in the construction programme, which can be summarised as:
- Lowland Phase 1 – Redevelopment of the Lowland to include the Entry Plaza, Aqua City, Birds of Paradise and the Funicular Tunnel within the new Waterfront.
 - Lowland Phase 2 – Redevelopment of the remaining area of the Lowland to include the Whisker’s Harbour, the Back of House Area and the Cable Car Plaza.
 - Headland Phase 1 – Redevelopment of the Headland to include the Vet Hospital, Thrill Mountain, Rainforest and the Polar Adventure within the new Summit.
 - Headland Phase 2 – Redevelopment of the Headland to include the Killer Whale Stadium and the Marine World within the new Summit.
 - Headland Phase 3 – Renovation of the Pacific Pier and the Ocean Theatre.
- 2.40 The proposed construction period for the development is summarised in **Table 2.1** below.

Table 2.1 Summary of Construction Period for the Development

Location	Zone	Duration
The Waterfront	Entry Plaza	July 06-Dec07 (18 months)
	Aqua City	July 06-October 08 (28 months)
	Whiskers Harbour	March 08-April 09 (14 months)

Location	Zone	Duration
The Waterfront	Back of House	March 08- February 09 (12 months)
	Birds of Paradise	June 06- July 07 (14 months)
The Summit	Trill Mountain	October 07-October 08 (13 months)
	Polar Adventure	May 08- June 09 (14 months)
	The Rain Forest	October 07-October 08 (13 months)
	Marine World	October 08-June 11 (34 months)
	Back of House	October 07-October 08 (13 months)

Concurrent Projects Having Potential for Cumulative Effects

2.41 No other significant projects have been identified that may interface with, or otherwise be constructed or operated concurrently with, this project for the redevelopment of Ocean Park. A possible exception is the MTR South Island Line project. However, the status and timing of the MTRC project is not certain. Therefore, it is anticipated that the proponent of the MTRC South Island Line (SIL) project would assess any additional impact arising from concurrent work (should it materialise).

Traffic Forecasts

2.42 For the purpose of this EIA study, forecast traffic flows for years 2005 and 2026 were adopted for all major roads within 500m of the proposed project site. Year 2005 represents the prevailing traffic conditions and year 2026 represents the maximum traffic flow conditions within 15 years after the Project commencement (the completion date of the new park is assumed to be 2011 according to current programme), allowing for a positive growth rate of the traffic flows in the assessment area. The traffic data, which are agreed by Transport Department, are presented in [Appendix 2.3](#).

2.43 As the SIL proposal was still under review by the Government at the time of reporting, the forecast traffic flow for year 2026 assumed that there would be no South Island Line (SIL). While the SIL would reduce the background traffic and transport many of the Park’s visitors, it was understood that the SIL would unlikely be in place by 2011. Since the SIL is not a committed project, the assessment would focus on the traffic situations without the SIL, which would be the worst-case scenario in terms of environmental impact.