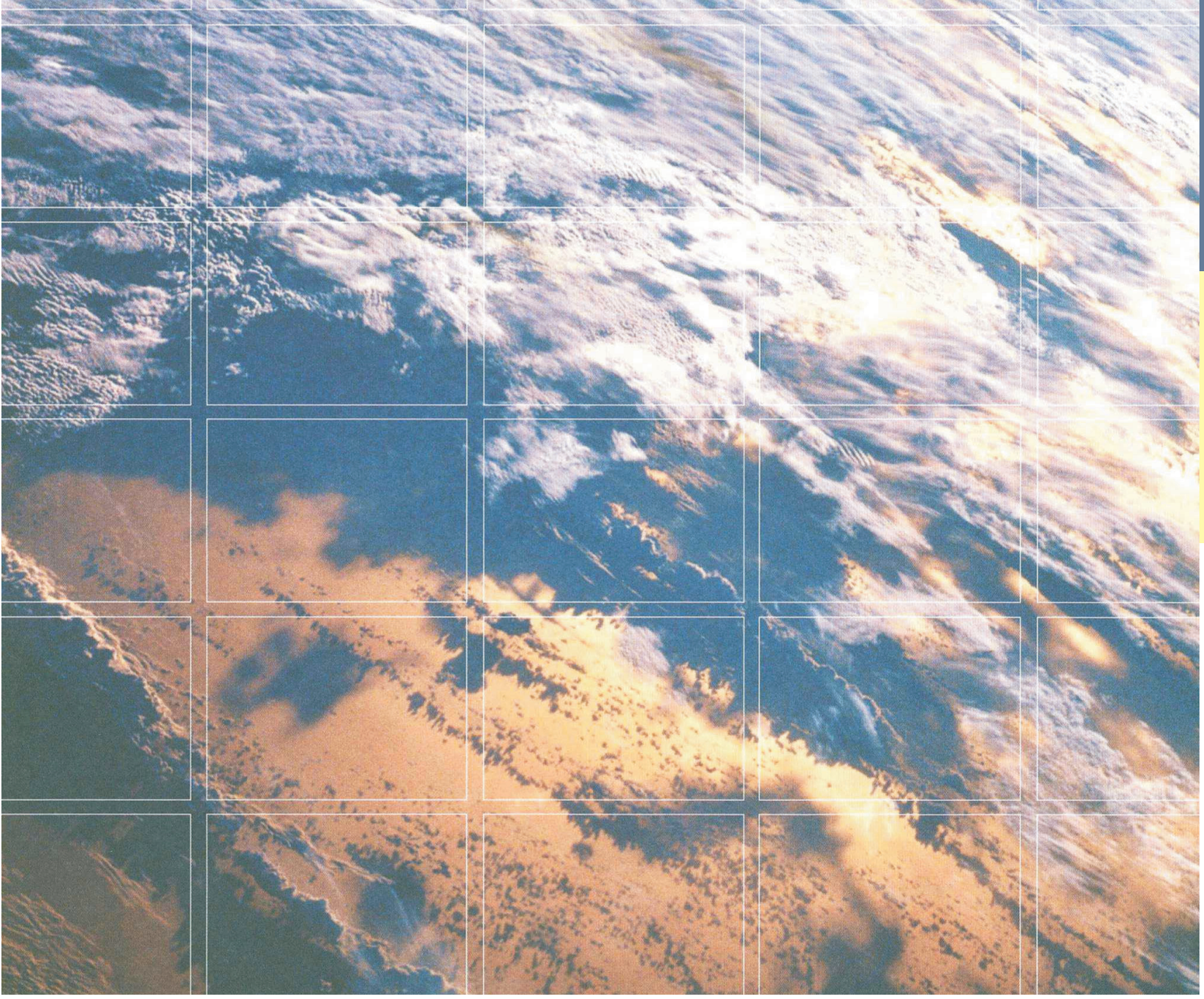

Part 4 - Site Preference

Sections 1 - 6

中華電力
CLP Power

ExxonMobil

Capco 青山發電有限公司 Castle Peak Power Co. Ltd.

Liquefied Natural Gas (LNG) Receiving Terminal and Associated Facilities

EIA Study (EIA Study Brief ESB-126/2005)

EIA Report
Part 4 - Site Preference
Sections 1 - 6

22nd December 2006

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ERM

Liquefied Natural Gas (LNG) Receiving Terminal and Associated Facilities

22nd December 2006

For and on behalf of
ERM-Hong Kong, Limited

Approved by: Robin Kennish

Dr Robin Kennish

Position: Director

Date: 22nd December 2006

ERM

CONTENTS

1 INTRODUCTION

This section of the EIA Report considers the relative merits of the Black Point and South Soko Island options for the development of a Liquefied Natural Gas (LNG) Receiving Terminal (the Project). The section draws from both the extensive analysis of the environmental subjects documented in *Parts 2* and *3* of the EIA Report and additional considerations which are presented in *Part 1*.

Consideration of the options has been undertaken with regards to the following:

- environmental aspects as defined by the LNG terminal EIA Study Brief (ESB-126/2005) issued by the Environmental Protection Department;
- the Hong Kong SAR Government's policy objectives with regard to the use of natural gas and the timetable for atmospheric emissions reduction; and
- engineering and cost considerations.

While the focus of this section of the report is on the relative merits of the two sites it should be noted that a thorough analysis of the need for the Project and a wide range of gas delivery and siting options has been provided in *Part 1*. The options considered included:

- import gas via pipeline from a nearby field;
- importing natural gas via the Guangdong Dapeng LNG terminal;
- import natural gas via a proposed LNG terminal in Mainland China;
- import LNG via a new terminal in Hong Kong;
- no action or defer decision.

Table 2.3 of *Part 1* presents a summary of the comparison of these alternatives.

Having concluded that the preferred option is for the development of a LNG terminal in Hong Kong, *Section 4* of *Part 1* describes the process by which the Black Point and South Soko Island sites were short-listed for further analysis in the EIA Study.

For each of the two sites, a number of alternative layouts, design options and construction methods have been considered to ensure that environmental impacts are avoided and, where unavoidable, are reduced to *the maximum extent practicable*.

2 ENVIRONMENTAL SUBJECTS CONSIDERED UNDER THE STUDY BRIEF

2.1 BACKGROUND

The Study Brief requires the conduct of a comprehensive range of technical studies, the findings of which are presented in detail in *Parts 2* and *3* for the South Soko Island and Black Point sites, respectively. A summary of the findings for the technical assessments is presented in *Table 2.1*.

In liaison with Government and non government stakeholders, CAPCO then undertook an Environmental Impact Assessment of both sites, consistent with the Study Brief issued by the Hong Kong Government under the *Environmental Impact Assessment Ordinance* (*EIAO*) and following the Technical Memorandum of the Environmental Impact Assessment Process (*EIAO-TM*).

It should be noted that the technical assessments were undertaken using conservative or worst case assumptions and hence there is a high degree of certainty that the full extent of potential impacts has been predicted and provided for by mitigation measures where necessary, and that as a result, none of the identified residual impacts are considered, following mitigation, to be *unacceptable* as defined by the standards and criteria applied under the *EIAO*. In some instances, additional measures have been incorporated into aspects of the Project design and working methods to provide an additional degree of confidence that any residual impacts do not breach the required standards and is not expected to have long term environmental implications.

It is worth noting that whilst the Project would be the first LNG receiving terminal to be developed in Hong Kong, the sources and characteristics of potential impacts during construction and operation in the Hong Kong context are not novel and are well understood. For example, there have been several projects permitted under the *EIAO* which include the installation of submarine gas pipelines and the development of reclamation sites. In particular, these projects have included works within or close to Indo-pacific Humpback Dolphin habitat, and long-term monitoring studies of these marine mammals have found that population numbers have remained stable.

2.2 THE CONSTRUCTION PHASE

A wide range of issues was addressed in the construction phase impact assessment and it was concluded that the Project *would comply with the criteria and standards* defined in the *EIAO-TM* and its associated *Annexes*. The principal environmental impacts associated with construction of the Project arise from the excavation, dredging and reclamation works.

Table 2.1 Summary of the Key Findings of the Environmental Performance Comparison

ISSUE	SOUTH SOKO	BLACK POINT
KEY ENVIRONMENTAL IMPACTS		
WATER	• The result of the construction of the terminal at South Soko will be the reduction in sea area by approximately 0.6 ha. • Maintenance dredging less than once every 10 years.	• The result of the construction of the terminal at Black Point will be the reduction in sea area by approximately 16 ha. • Maintenance dredging approximately once every 4 to 5 years.
WASTE	• Need to dispose of 3.89 Mm^3 of marine sediment. • Need to dispose of 179,000 m^3 of excavation waste off site assuming 1.30 Mm^3 is used to rock armour the submarine gas pipeline.	• Need to dispose of 3.15 Mm^3 of marine sediment. • 0 m^3 of excavation waste (assuming all material accommodated within the reclamation site)
TERRESTRIAL ECOLOGY	• Permanent loss of approximately 7.3 ha of shrubland, 2.8 ha of plantation, 0.5 ha of abandoned wet agricultural land, 1.8 ha of grassland and 5.3 ha of disturbed area. The affected areas are considered to be generally low quality habitats. 0.2 ha of medium ecological value secondary woodland will also be lost. • Many of the habitats on South Soko Island are highly modified and disturbed as a result of village developments up to the 1960s, the construction of a Detention Centre in 1980s and its subsequent demolition in the 1990s.	• Permanent loss of approximately 4.2 ha of shrubland considered to be of moderate ecological value and 1.0 ha of disturbed area • Although the terrestrial ecology at Black Point is mainly dominated by moderate-low value shrubland/grass habitat typical of Hong Kong, it must be noted that the Project Area is relatively undisturbed with no significant human alterations.
MARINE ECOLOGY	• Permanent loss of approximately 265 m of natural rocky shore/natural subtidal habitat and approximately 35 m of sandy shore which are of low to medium ecological value. The residual impact is considered to be acceptable, as the loss of these habitats will be compensated by the provision of approximately 0.6 km of sloping rubble mound/rock or concrete armour seawalls. • Permanent loss of approximately 0.6 ha of subtidal soft bottom	• Permanent loss of approximately 600 m of natural rocky shore/intertidal habitat which are of low ecological value. The residual impact is acceptable, as the loss will be compensated by the provision of approx. 1.1 km of sloping rubble mound/rock or concrete armour seawalls. • Permanent loss of approximately 16 ha of subtidal soft bottom assemblages within the reclamation sites. The residual impact is acceptable as even though the size of habitat lost is relatively large it is of

ISSUE	SOUTH SOKO	BLACK POINT
	assemblages and marine waters within the reclamation site. The residual impact is acceptable as the habitat is of medium to low ecological value and supports low sightings of marine mammals.. • Permanent loss of approximately 1.1 ha of coastal habitat as a result of seawall modifications. The residual impact is acceptable as the habitat supports assemblages of low ecological value. • Maintenance dredging of specific areas of the approach channel and turning basin is expected to be required once every 10 years. Although impact to water quality is expected to be compliant with current WQO standards, the works will result in occasional disturbance to the low to moderate ecological value habitat within the dredged areas. • Short term and temporary impacts from the installation of the submarine gas pipeline, watermain and power cable. • No adverse residual ecological impacts have been identified. The marine environment around the South Soko Island has been subject to disturbance in the past as a result of the reclamations in Sai Wan and Tung Wan. To the East of the South Soko island lies the active South Cheung Chau Mid Disposal Ground and to the West the now inactive but gazetted Sand Dredging and Mud Disposal Area.	relatively low ecological value. • Permanent loss of approximately 16 ha of marine waters within the reclamation sites. The residual impact is considered to be acceptable as the habitat forms only a small portion of the extensive home range of affected animals (typically over 100 km^2) and is not expected to result in long term biologically significant impacts on the population of marine mammals in Hong Kong. • Maintenance dredging of specific areas of the approach channel and turning basin is expected to be required once every 4 to 5 years. Although impact to water quality is expected to be compliant with current WQO standards, the works will result in relatively regular disturbance to the low ecological value habitat within the dredged areas. • No adverse residual ecological impacts have been identified. It must also be noted that the marine environment around Black Point has been subject to disturbance in the past as a result of the reclamation at BPPS and sand dredging.
FISHERIES	• Acceptable residual impact is loss of 0.6 ha of marine waters used for small-scale fishing operations.	• Residual impact is loss of 16 ha of fishing grounds. Considered acceptable despite relatively large size as production values are low.
LANDSCAPE & VISUAL	• Land based viewing locations too far removed from the proposed LNG terminal to be aware of the change in landscape. • The principal visual change and impact on landscape character will be for those few viewers who visit the surrounding area and particularly the ocean between South and North Soko. • Land based VSRs will experience negligible to moderate adverse	• LNG terminal only visible from limited viewpoints, including visitors to the remote island of Lung Kwu Chau in the Marine Park and the transient passengers on ferry routes. • Visitors to Lung Kwu Chau may experience a moderate to significant visual impact during clear days. However there are low user numbers to this area. The users of the ferry routes may experience a moderate visual

ISSUE	SOUTH SOKO	BLACK POINT
	impacts. • VSRs on South Soko and on waters around South Soko will experience significant adverse impacts. However, there are low visitors numbers in this area, and no residents, to experience this impact. • Potential glare and lighting impacts will be low due to the distances between the site and careful lighting selection and placement. • Impact on the landscape character of South Soko is considered acceptable as relatively few visitors will experience this impact.	impact. • Potential glare and lighting impacts will be low due to the distances between the site and viewers and careful lighting selection and placement. • Impact on the landscape character of Black Point headland is considered acceptable due to the low number of viewers that will experience this impact and the adjacent industrial nature of the landscape.
CULTURAL HERITAGE	• Direct loss of archaeological deposits areas Sites A to E. Given the construction of underground utilities making in-situ preservation impossible, as a last resort, an archaeological action plan has been recommended which is a separate document containing the detailed rescue excavation plan, archaeological monitoring plan and contingency plan to preserve impacted archaeological deposits by record. • Impact on the Tai A Chau Tin Hau Temple, 21 graves and the associated tablet and 7 earthshrines is expected. These sites will be relocated with the provision of photographic and cartographic records to preserve them by record prior to their removal. An archaeological survey will be undertaken at the suitable relocation site for the Tai A Chau Tin Hau Temple to confirm if any archaeological deposits will be impacted at the relocation site. If archaeological deposits are identified, appropriate mitigation measures will be implemented to mitigate the impact.	• Loss of two building structures at Terrace 1, a WWII cave at Terrace 2 and a stone structure at Terrace 3 of low cultural resource value. • The loss is considered acceptable provided that a photographic and cartographic recording is undertaken for the sites following AMO's requirements.

ISSUE	SOUTH SOKO	BLACK POINT
HAZARD TO LIFE	• The results of the Marine Quantitative Risk Assessment of the transit of the LNG carrier to South Soko indicated that individual and societal risk levels are acceptable within the HKSARG risk guidelines presented in *Annex 4* of the *EIAO-TM*. • The results of the Terminal and Pipeline Quantitative Risk Assessments of the LNG terminal at South Soko indicated that individual and societal risk levels comply with the HKSARG risk guidelines presented in *Annex 4* of the *EIAO-TM*. • The location of the South Soko Island provides for very low numbers of surrounding land and marine-based populations with exposure to both the terminal site and the marine transit.	• The results of the Marine Quantitative Risk Assessment of the transit of the LNG carrier to Black Point indicated that individual risk is acceptable and the societal risk is as low as reasonably practicable (ALARP) as set out in HKSARG risk guidelines presented in *Annex 4* of the *EIAO-TM*. • The results of the Terminal Quantitative Risk Assessments of the LNG terminal at Black Point indicated that individual and societal risk levels comply with the HKSARG risk guidelines presented in Annex 4 of the EIAO-TM. • Access to the Black Point site today requires marine transit through busy harbour traffic, and along densely populated areas, of: - Western Hong Kong Island: Ap Lei Chau, Cyberport; - Ma Wan Island and Tsing Ma Bridge; - New Territories: Sham Tseng, Tsing Lung Tau, Gold Coast, Tuen Mun.

The length of natural coastline lost due to the development at South Soko Island is approximately 50% less than that associated with the development at Black Point. Residual impacts to water quality, marine ecology and fisheries as a consequence of the proposed marine construction works have been assessed in considerable detail and are demonstrated to be acceptable for both sites. Acceptability has been achieved by a combination of means, including reducing the extent of marine habitat loss arising from reclamation works and adopting dredging rates that are sensitive to the condition of the works area. For example, through the integration of environmental considerations into the design of the facility layout at South Soko Island, the overall reclamation area has been reduced from approximately 13 ha to 0.6 ha. Permanent loss of approximately 1.1 ha of coastal habitat will occur as a result of seawall modifications.

For the other construction phase impacts, such as noise and air quality, the principal factor that differentiates the two sites is their distance from sensitive receivers. The Black Point site is approximately 2 km from the closest residential sensitive receiver, whereas the South Soko Island site is over 6 km distant.

2.3 *THE OPERATION PHASE*

A wide range of issues have been addressed in an assessment of the operation phase of the Project including the assessment of impacts on the environment(1) and hazard to life associated with the operation of the LNG Terminal. The Project was judged against the criteria and standards defined in the *EIAO-TM* and its associated *Annexes*.

As required by the Study Brief, the hazard to life assessment consisted of a very thorough and detailed analysis. The Study Brief and *EIAO-TM* guidelines include both the consideration of societal and individual risks and Hong Kong's standards are amongst the most stringent in the world. In addition to consideration of the terminal itself, and in the case of the South Soko Island option, the associated submarine pipeline, the assessments have included an analysis of risks associated with the LNG carrier transit by purpose-built LNG carriers in Hong Kong waters, ie the Marine Quantitative Risk Assessment.

For each of the components assessed in the South Soko *EIA Report*, the assessments and the residual impacts have all been shown to be acceptable within the relevant standards/criteria of the *EIAO-TM* and the associated *Annexes*.

(1) In this context, "environmental perspective" refers to environmental performance comparison parameters of, Air, Noise, Water, Waste, Terrestrial Ecology, Marine Ecology, Fisheries, Landscape and Visual, and Cultural Heritage.

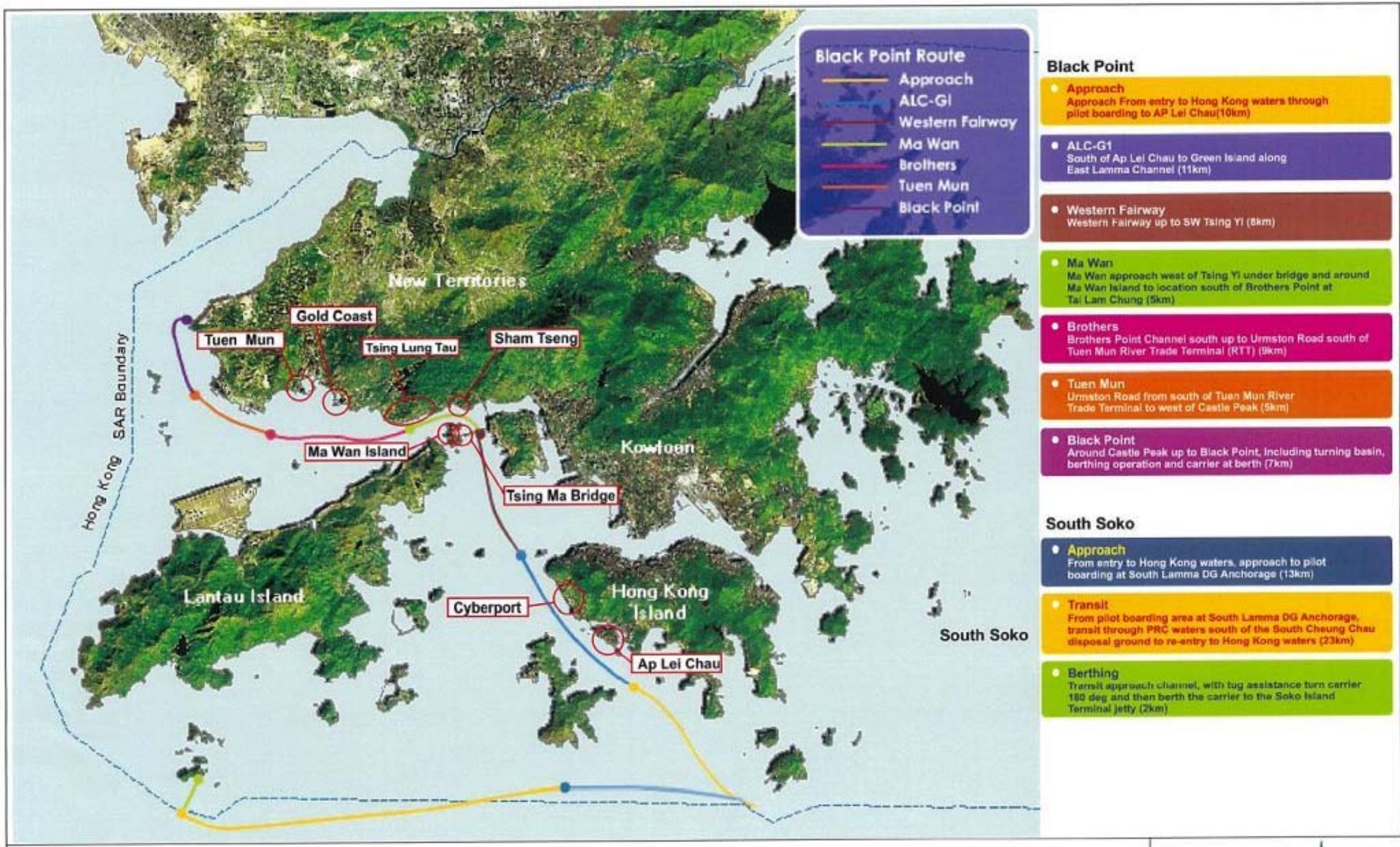
The assessment has evaluated the hazards to life associated with the LNG terminal as well as the marine transit of LNG. Based on the risk criteria set out in *Annex 4* of the *EIAO-TM,* the assessment has concluded that the individual risk for the marine transit and the LNG terminal are acceptable. However, the societal risk of the marine transit to Black Point is As Low As reasonably Practicable (ALARP) [1] for some areas of the marine transit; the difference in risk for these areas is due to busy marine traffic and high population density particularly through the Ma Wan channel.

Measures to mitigate the marine societal risk through these areas from ALARP to Acceptable are not considered to be implementable at this time by the relevant Authority due to their impact on other marine traffic in the busy Hong Kong environment. LNG transit through these areas is avoided by the selection of the South Soko site, where the risk of the marine transit has been assessed as Acceptable along the entire route.

One of the principal differences between the South Soko Island site and the site at Black Point and their associated LNG carrier transit routes is their proximity to land and marine-based populations. The location of the South Soko Island provides for very low numbers of surrounding land and marine-based populations with exposure to both the terminal site and the marine transit (*Figure 2.1*). Access to the Black Point site today requires marine transit through busy harbour traffic, and along densely populated areas, of:

- Western Hong Kong Island: Ap Lei Chau, Cyberport;
- Ma Wan Island and Tsing Ma Bridge;
- New Territories: Sham Tseng, Tsing Lung Tau, Gold Coast, Tuen Mun.

(1) Under Hong Kong *EIAO-TM* guidelines, there are three regions of risk categorisation: "Acceptable" requires no further action; risk within "ALARP" should be mitigated to as low as reasonably practicable; and, "Unacceptable" cannot be permitted.



Black Point

- **Approach**
  Approach From entry to Hong Kong waters through pilot boarding to AP Lei Chau(10km)
- **ALC-G1**
  South of Ap Lei Chau to Green Island along East Lamma Channel (11km)
- **Western Fairway**
  Western Fairway up to SW Tsing Yi (8km)
- **Ma Wan**
  Ma Wan approach west of Tsing Yi under bridge and around Ma Wan Island to location south of Brothers Point at Tai Lam Chung (5km)
- **Brothers**
  Brothers Point Channel south up to Urmston Road south of Tuen Mun River Trade Terminal (RTT) (9km)
- **Tuen Mun**
  Urmston Road from south of Tuen Mun River Trade Terminal to west of Castle Peak (5km)
- **Black Point**
  Around Castle Peak up to Black Point, Including turning basin, berthing operation and carrier at berth (7km)

South Soko

- **Approach**
  From entry to Hong Kong waters, approach to pilot boarding at South Lamma DG Anchorage (13km)
- **Transit**
  From pilot boarding area at South Lamma DG Anchorage, transit through PRC waters south of the South Cheung Chau disposal ground to re-entry to Hong Kong waters (23km)
- **Berthing**
  Transit approach channel, with tug assistance turn carrier 180 deg and then berth the carrier to the Soko Island Terminal jetty (2km)

Figure 2.1

LNG Carrier Transit Routes for Black Point and South Soko Option

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DATE: 08/08/2006

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3 MEETING THE HONG KONG SAR GOVERNMENT'S POLICY OBJECTIVES

3.1 THE PEARL RIVER DELTA AIR QUALITY MANAGEMENT PLAN

Reducing atmospheric emissions and improving air quality is a major policy objective for the Hong Kong SAR Government and for the Guangdong Provincial Government. In December 2003, the two governments jointly drew up the Pearl River Delta Regional Air Quality Management Plan (the "Management Plan") with a view to meeting an agreed set of emission reduction targets. The control of emissions from the power generation industry is a central component of this policy.

The Hong Kong SAR Government's environmental policy includes the control of emissions from the existing power stations in Hong Kong. Central to this effort is the use of natural gas. The recognition of the role of natural gas in emissions control was affirmed by the Hong Kong SAR Government in the 2005-06 Policy Address (1):

> *"**61.** To fully achieve the emissions reduction targets in 2010, we have asked the power companies to … use natural gas for power generation as much as possible.*

The provision of natural gas for the purposes of power generation is consistent with the Hong Kong SAR Government's policy and is widely supported by the community.

3.2 RELATIVE PERFORMANCE OF THE TWO OPTIONS

The time required to bring a LNG receiving terminal into operation differs between the two sites.

3.2.1 *South Soko Island*

It is estimated that the LNG terminal, if constructed at the South Soko Island site, can be brought on-line and deliver first gas 12 to 18 months earlier than one located at the Black Point site. This is due to a shorter construction schedule and permitting and zoning processes.

For the South Soko location, once access to the site is granted through a Short Term Tenancy agreement, construction work could begin consisting of:

- 10 months of excavation and site preparation activity, followed by;
- 30 months of tank and plant construction, followed by;
- 2 months of cool-down and commissioning activities.

(1) The 2005-06 Policy Address, Strong Governance for the People, Paragraph 61.

The pipeline construction and a small amount of reclamation activity would be performed concurrently with tank and facility construction upon completion of *Foreshore and Seabed (Reclamations) Ordinance* (*FSRO)* process.

Site preparation and construction is able to commence relatively quickly because (a) the large flat area, (the former Detention Centre site) and (b) the existing dock enable mobilization activities to commence immediately and facilitate delivery of personnel and materials.

Based on the above activities, a LNG terminal at South Soko requires approximately 42 months from initial site access to first delivery of gas.

3.2.2 Black Point

For the Black Point site, initial site access is more difficult than at South Soko, as there is no usable, flat work area until one is formed through excavation and reclamation. Once access to the site is granted through a Short Term Tenancy agreement, site formation could begin consisting of

- 15 months of excavation;
- Up to 6 months potential delays in completion of *Foreshore and Seabed (Reclamations) Ordinance (FSRO)* gazettal process
- once the *FSRO* gazettal is approved the follow on construction would consist of:

5 months of seawall construction (for the reclaimed area) and the initial phases of reclamation to enable tank construction to start, followed by [1] ;

  - 32 months of tank and plant construction, followed by;
  - 2 months of cool-down and commissioning activities.

Reclamation activity of approximately 12 months duration would be performed simultaneously with tank construction and prior to plant area construction.

Based on the above activities, a LNG terminal at Black Point requires approximately 54 – 60 months from initial site access to first delivery of gas.

The prompt provision of a new gas supply is a matter of the utmost importance due to the earlier than planned depletion of the reserves at the Yacheng gas field. In addition to ensuring continuity in the reliability of power supply to the SAR, the South Soko option allows an earlier replacement of natural gas supply and can provide flexibility for higher gas off-take depending on certainty of remaining Yacheng gas availability which would result in CAPCO bringing less coal and avoiding associated emissions.

(1) The adoption of measures to control impacts to dolphins may require avoidance of certain seasons for some marine works. This could introduce an additional 2 1/2 year delay to the programme.

The principal environmental benefit of the South Soko option is the reduction in emissions of oxides of nitrogen, particulate matter and sulphur dioxide. Adopting the South Soko Island site will avoid additional emissions of these three groups of pollutants for a period of up to 18 months.

In the context of the Hong Kong SAR Government's policy objectives for emissions reduction, the South Soko Island option enables an earlier gas supply replacement and corresponding environmental benefits when compared to the Black Point site.

4 ENGINEERING CONSIDERATIONS

The key components of a LNG receiving terminal include:

- marine jetty facilities for unloading LNG;
- full containment tanks for LNG storage;
- process equipment for the regasification of LNG; and
- utilities and associated infrastructure.

These components are common to both options. The principal difference between the components for the two options is the requirement for a submarine gas pipeline for the South Soko Island option.

There are also a number of differences associated with the civil engineering and site formation work, as presented in *Table 4.1*.

Table 4.1 Key Design Parameters

	South Soko Island	**Black Point**
Overall project area	36.5 ha, mainly where the former Detention Centre and its facilities were located	32 ha on the headland south of the Black Point Power Station
Permanent Land-based works areas	18.5 ha	5 ha
Reclamation areas	0.6 ha	16 ha
Seawall modifications	1.1 ha	0 ha
Dredging volume	3.89 Mm^3	3.15 Mm^3

The South Soko Island site requires considerably less reclamation work than the Black Point site, ie 0.6 ha versus 16 ha. The larger reclamation works required at Black Point result in a site development schedule that is around six months longer than for the South Soko site.

5 SITE PREFERENCE CONCLUSION

The preferred site for the LNG terminal has been identified after undertaking extensive studies and investigation works. A comprehensive Environmental Impact Assessment (EIA) of the South Soko Island and Black Point options has been conducted in accordance with the requirements of the Study Brief and *EIAO-TM*. The EIA Study has been conducted in parallel with wide-ranging engineering studies, marine resource assessments and a suite of site investigation works.

Taking into consideration the range of factors described in the previous sections, the South Soko Island site is preferred. The principal differentiators between this site and the Black Point option are as follows:

- **Earlier replacement gas supply:** South Soko will enable a replacement gas supply 12 to 18 months earlier than the Black Point option;
- **Gas offtake:** South Soko allows an earlier replacement of natural gas supply and can provide flexibility for higher gas off-take depending on certainty of remaining Yacheng gas availability which would result in CAPCO burning less coal, and avoiding the associated emissions;
- **Meeting the Hong Kong SAR Government's policy objectives for emissions reduction:** South Soko enables CAPCO to meet the Hong Kong SAR Government's emission targets sooner than the Black Point option;
- **Reducing reclamation works:** South Soko requires less land reclamation, while its offshore pipeline to Black Point results in only temporary environmental impacts of short duration.
- **Marine transit:** The location of South Soko provides for very low numbers of surrounding land and marine-based populations with exposure to both the terminal and the marine transit.

6 OPPORTUNITIES FOR PROVIDING ADDITIONAL BENEFITS TO THE COMMUNITY

CAPCO believes that siting the LNG terminal on South Soko Island provides an opportunity to enhance the island's marine and terrestrial environments for the benefit of the community and would support a Soko Islands and Southwest Lantau Marine Park. By assisting government through the provision of initial funding for education and research to support the establishment of the Parks, CAPCO believes it can create the necessary stimulus to bring this conservation area to fruition.

The enhancements envisaged are not intended to address or mitigate the potential impacts of the LNG terminal on South Soko Island as such will be addressed through specific construction practices, mitigation measures and monitoring programs. Rather, the enhancements envisaged are similar to recent local and overseas experience whereby industrial facilitates and conservation areas co-exist within the same area [1,2].

With input from a range of stakeholders including Government, NGOs, local community groups and fishing interests, CAPCO proposes that an Enhancement Plan be developed. This Plan will contain various components as described below and draw on local marine conservation programmes enhanced by overseas experience in the establishment of marine parks and conservation areas. In this regard, CAPCO has commissioned detailed and extensive marine studies as part of its EIA process, obtaining expert views from well known and highly respected specialists in marine conservation. CAPCO will provide access to those studies as part of any Enhancement Plan.

CAPCO has identified the following key possible enhancements through its discussions with stakeholders and experts:

- **Marine Conservation:** CAPCO understands that the waters around the Soko Islands and Southwest Lantau have the potential to be zoned for the purposes of marine conservation. As discussed in the introduction to this section, CAPCO is prepared, as a stakeholder, to assist government in funding a portion of the initial cost of establishing such a marine conservation area. CAPCO envisages supporting the Authority to consider and decide on the optimal size of and the objectives for the marine conservation area. During and after construction of the LNG terminal, CAPCO will carry out line transect surveys of dolphins and finless porpoises and acoustic studies surveys as part of census and behavioural investigations. These surveys and investigations will assist in ongoing marine conservation efforts and information gathering in respect of these mammals. CAPCO will also undertake studies into the population biology of amphioxus. These surveys will follow accepted protocols for pre, during and post construction phases of the project. The aforementioned behavioural and biological studies would form part of CAPCO's scientific support for the marine park programme.

- **Rehabilitation of Marine Environments:** CAPCO's experts have advised that artificial reefs could be deployed in the area to the west of the North Soko Island formerly used as a sand dredging and marine borrow area, to aid its rehabilitation and encourage fisheries production. CAPCO would fund a study to confirm the suitability of the artificial reef programme and, subject to the results of this study, provide assistance in funding the establishment of the artificial reef proposal.

- **Cultural Heritage:** A portion of the South Soko Island is known to be of archaeological interest. As part of the LNG terminal project, CAPCO will conduct a rescue excavation of artefacts disturbed by the proposed facility. While specific implementation plans remain to be defined, CAPCO is committed to provide assistance to AMO for placing these artefacts on public display at a suitable location.

- **Public Access:** In order to maintain and improve access for grave visitation, and for fishermen and recreational users of South Soko Island, CAPCO will provide a new public pier and will support programs to maintain the public areas and amenities in a clean and tidy condition. The LNG facility will also bring potable water to South Soko.

- **Education:** CAPCO is willing to potentially support education efforts focusing on cultural heritage, marine and terrestrial ecology conservation at and around the Soko Islands. Such efforts could include the production of educational materials that relate to the marine conservation areas of Fan Lau and Soko Islands as well as the benefits of clean energy.

- **Recreation:** Recreational use of the Island will be enhanced by the provision of improved public access with the incorporation of rest areas, view points, and bird watching areas near the existing freshwater reservoir.

Figure 6.1 illustrates some of the key attributes of an indicative Enhancement Plan at South Soko Island and Southwest Lantau.

CAPCO is committed to working with the Country Marine Parks Authority, other relevant Government departments and other stakeholders to formulate and then agree, after the EIA process has been completed, on the most appropriate means, funding and time of implementation of an Enhancement Plan for South Soko Island and Southwest Lantau.

(1) AAHK's Aviation Fuel Receiving Facility located in the Lung Kwu Chau and Sha Chau Marine Park, HK

(2) Dominion Cove Point Liquid Natural Gas, LP's LNG terminal operated within the Cove Point Natural Heritage Trust, Chesapeake Bay, Maryland, USA

South West
Lantau
Marine Park

North
Soko

Soko Islands
Marine Park

South
Soko

Rehabilitation - Marine Systems

Possible artificial reefs to enhance fish abundance and diversity

Marine Conservation

Explore designation as a Marine Park utilising data collected during the EIA to re-define boundaries considering operational requirements and marine conservation objectives

Biodiversity

Line transect surveys and behavioural investigations for marine mammals

Legend

- Pier & Relocated Tin Hau Temple
- Natural Heritage Displays
- Existing Reservoir
- Heritage Trail
- Eco Trail
- Previously Proposed Marine Park

Capco

SOUTH SOKO
Fig 6.1 Indicative Enhancement Plan 1 of 2

Landscape Architecture & Urban Design
21 / F Lincoln House
979 Kings Road
Taikoo Place
Island East, Hong Kong

Project No. 0018180
June 2006

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Public Access

Existing Pier

Potential Pier

Access will be maintained through a replacement to the existing pier

Cultural Heritage - Display

Image from 'Quarterly Bulletin of the Antiquities and Monuments Office, Vol 4 No. 2'

Establish a display of recovered artefacts

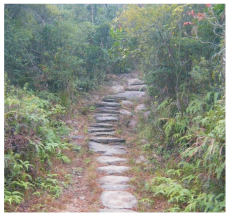
Education

Provide facilities to support education efforts on marine and terrestrial ecology and cultural heritage features of Island

Legend

- Pier & Relocated Tin Hau Temple
- Natural Heritage Displays
- Existing Reservoir
- Heritage Trail
- Eco Trail

Recreation



Opportunities for outdoor recreation

Capco

SOUTH SOKO
Fig 6.1 Indicative Enhancement Plan 2 of 2

Landscape Architecture & Urban Design
21 / F Lincoln House
979 Kings Road
Taikoo Place
Island East, Hong Kong

Project No. 0018180
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ENVIRONMENTAL RESOURCES MANAGEMENT LTD