# Construction of Cycle Tracks and the associated Supporting Facilities from Nai Chung to Sai Kung Town

# **Project Profile**

(prepared in accordance with the Environmental Impact Assessment Ordinance (Cap. 499))

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Civil Engineering and Development Department

# **Project Profile**

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#### 1. BASIC INFORMATION

# 1.1 Project Title

1.1.1 The project is entitled "Construction of Cycle Tracks and the associated Supporting Facilities from Nai Chung to Sai Kung Town" which forms part of the PWP no. 265RS of title "Cycle Tracks connecting North West New Territories with North East New Territories - extension".

# 1.2 Purpose and Nature of Project

1.2.1 The purpose of the Project is to construct a new cycle track connecting the existing cycle track at Nai Chung to Sai Kung Town and the provision of supporting and recreation facilities. The cycle track is intended primarily for recreational use.

## 1.3 Name of Project Proponent

1.3.1 The project proponent is the New Territories North and West Development Office of Civil Engineering and Development Department, Government of the Hong Kong Special Administrative Region.

#### 1.4 Location and Scale of Project and History of Site

- 1.4.1 The location and scope of the Project includes the following:
- 1.4.2 Construction of about 3.5m wide and 8.5km long cycle track from Nai Chung to Sai Kung Town.
- 1.4.3 Construction of associated facilities which include 1 no. of resting place and 1 no. of entry/exit hub.
- 1.4.4 Associated streetscape, landscape, utilities diversions, traffic aids installation, street lighting, water, sewerage and drainage works.
- 1.4.5 Provision of environmental mitigation measures.
- 1.4.6 The alignment of the proposed cycle track with associated supporting facilities is shown in Figure A.

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Project Profile

## 1.5 Number and Types of Designated Projects to be Covered by the Project Profile

- 1.5.1 This Project Profile covers a single Designated Project (DP).
- 1.5.2 The project is a Designated Project under Item Q.1 of Part I, Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO), since part of the construction works including earthworks falls within Ma On Shan Country Park and Sai Kung West Country Park, and a conservation area between Kei Ling Ha San Wai and Shui Long Wo.
- 1.5.3 The relevant items from Part I, Schedule 2 of the EIAO are as follows:

Item "Q.1: All projects including new access roads, railways, sewers, sewage treatment facilities, earthworks, dredging works and other building works partly or wholly in an existing or gazetted proposed country park or special area, a conservation area, an existing or gazetted proposed marine park or marine reserve, a site of cultural heritage, and a site of special scientific interest, ..."

# 1.6 Name and Telephone Number of Contact Person

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#### 2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

# 2.1 Project Implementation

2.1.1 The project will be implemented under the public works programme by CEDD. The investigation (I), design and construction supervision (DC) will be carried out under two Consultancy Agreements, one to undertake the I assignment including environmental impact assessment (EIA) and the other to undertake the DC assignment. The works will be carried out by CEDD's appointed contractor.

# 2.2 Project Programme

2.2.1 The works are scheduled to commence in mid 2011 and will be completed by mid 2015.

## 2.3 Interactions with Other Projects

2.3.1 The project may interface with the following major projects:

Project (Proponent)	Status
Integration of Ma On Shan and Pak Kong Fresh Water Supply Systems (Water Supplies Department)	Under Planning
Hiram's Highway Improvement Stage 2 (Highway Department)	Under Planning

#### 3. POSSIBLE IMPACTS ON THE ENVIRONMENT

#### 3.1 Construction Phase

Air Quality

3.1.1 Dust generating activities including cycle track formation and minor slope works will be involved during construction stage. The duration of the impacts would be relatively short, and likely to be in the region of several months only.

Noise

3.1.2 Noise impacts during construction would be primarily due to the use of powered mechanical equipment (PME). The magnitude of the impacts depends on the type of works (and hence type of plant required), and the distance to the sensitive receiver.

Water Quality

- 3.1.3 The water quality impacts during construction may occur due to run-off from site, or from other releases to the aquatic environment. Any such impacts are likely to be of short duration, but have the potential to be of significant magnitude.
- 3.1.4 Portion of the alignment passes through designated Water Gathering Grounds. The impact should be minimised by the use of suitable techniques during construction and will be subject to approval by Water Supplies Department.

Waste Management

3.1.5 Waste arising from construction will largely consist of spoil generated during earthworks, and general construction waste/surplus materials. The waste management impact is classified as low. Measures should be adopted to avoid and minimise the generation of construction wastes.

Ecology

- 3.1.6 Portions of the alignment will pass through a conservation area, Sai Kung West Country Park and Ma On Shan Country Park along Sai Sha Road. Construction works may have potential ecological impacts on the affect areas. Measures should be adopted to avoid and minimise the impacts.
- 3.1.7 Country park, conservation area and coastal protection area are also located along part of Tai Mong Tsai Road and may potentially be affected by the construction works. Measures should also be adopted to avoid and minimise impacts on the affected areas.

Landscape and Visual Impacts

- 3.1.8 The works associated with the cycle track formation are relatively minor, and hence the landscape and visual impacts are not expected to be of a high magnitude. Earthworks and construction of retaining structures will be confined to those areas adjacent to existing roads, and hence the landscape and visual impacts will be small in scale and of short duration.
- 3.1.9 In many places, the cycle track runs alongside roads where there are many trees. These trees vary from recently planted landscaping works, to relatively large mature specimens. A detailed tree survey and felling plan will be prepared as part of the Environmental Impact Assessment.

Cultural Heritage

3.1.10 Portion of the alignment passes through Sha Ha Archaeological Site at grade. The impacts of the construction works on the archaeological site will be reviewed as part of the Environmental Impact Assessment.

#### Hazard to Life

- 3.1.11 Portion of the alignment lies within the Consultation Zone of Ma On Shan Water Treatment Works Potential Hazard Installation (PHI). The route passes within approximately 500m of the Water Treatment Works.
- 3.1.12 The number of labourers working within the Consultation Zones during construction stage is comparatively of small scale and thus the impact is not expected to be significant. The hazard to life during construction will be assessed as part of the Environmental Impact Assessment.

# 3.2 Operational Phase

Air Quality

3.2.1 The project has no source of air emission. The kiosks at entry/exit hub, which are potential air sensitive receivers in the project, are located at the sea-front of Sai Kung Town and far from any major emission source. The roads in Sai Kung Town are only rural roads and local roads. The resting place is also located far from any major emission source, and all the roads near it including Sai Sha Road and Tai Mong Tsai Road are only rural roads. The associated local air quality impacts upon people staying there due to vehicular emissions should be minimal. The air quality impact during operation of the project is not anticipated.

Noise

3.2.2 Cycles are not significant generators of noise, and there is no noise sensitive receivers in the project site. Noise impact during operation is not anticipated.

Water Quality

3.2.3 Run-off from the cycle track is unlikely to be significantly contaminated due to the lack of motorised traffic, and hence the impacts of run-off are expected to be minimal. Approval will be required from the Water Supplies Department to ensure that there are no impacts upon the functioning of the Water Gathering Grounds.

Waste Management

3.2.4 Relatively small quantities of municipal waste will be generated by users of the cycle track. This will be similar in composition to domestic waste, and will likely comprise mainly food waste and packaging. The waste will be concentrated in areas where cyclists are encouraged to stop, i.e. at the supporting facilities.

**Ecology** 

3.2.5 The cycle track lies alongside existing roads or in Sai Kung Town urban area. The ecology impacts during the operation of the cycle tracks are expected to be minimal. Nevertheless, the ecology impacts will be addressed in the Environmental Impact Assessment.

Landscape and Visual Impacts

3.2.6 The cycle track is intended mainly for recreational purpose and will be designed to enhance the environment including landscape and visual aspects.

Cultural Heritage

3.2.7 There is a portion of the alignment of cycle track which passes through Sha Ha Archaeological Site. The cycle track is at grade and there will not be any direct impacts on the Sha Ha Archaeological Site during operation stage.

#### Hazard to Life

- 3.2.8 Portion of the alignment lies within the Consultation Zone of Ma On Shan Water Treatment Works PHI. The route passes within approximately 500m of the Water Treatment Works.
- 3.2.9 Hazard impact on the cyclists will be addressed as part of the Environmental Impact Assessment.

# 4. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT Surrounding Environment including Existing and Planned Sensitive Receivers

#### 4.1 Air Quality

4.1.1 Air quality sensitive receivers (ASR) in the surrounding area include domestic premises, hotels, hostels, hospitals, clinics, nurseries, temporary housing, schools and other educational institutions, factories, shops, places of worship, libraries, law courts, sports stadiums and performing arts centres. The main air quality sensitive receivers in the vicinity of the Designated Project are listed below:

ASR	Estimated Shortest Distance to Alignment (m)
Ma Kwu Lam	110
Tai Tung	45
Nga Yiu Tau	130
Sai Keng Tsuen	20
Kei Ling Ha San Wai	70
Kei Ling Ha Lo Wai	40
Barbeccue/Picnic Area	5
Long Keng	45
Wong Chuk Wan	20
Village Houses along Tai Mong Tsai Road	5
Barbecue/Picnic Area	5
Fui Yiu Ha	5
Star Plaza	10
Sai Kung Rural Committee	50
Sai Kung Public School	10
Buildings along Po Tung Road	5
Sai Kung Garden	5
Sai Kung Lok Yuk Kindergarten	20
The Sai Kung Jockey Club Town Hall	5
Sai Kung Sung Tsun Catholic Primary School	70
Sai Kung Interim Housing	10
Burlingame Garden	30
Hunlicar Garden	30

ASR	Estimated Shortest Distance to Alignment (m)
Sha Ha	5
New Beach Resort Hotel	5
Chuk Yeung Road	35
Luna House	15
Violet Garden	70
Hopes Villa	40
Lake Side Garden	15
Buildings along See Cheung Street	5
Buildings along Man Nin Street	35
Sai Kung Hoi Pong Square	20
Siu Yat Building	15
Lee Siu Yam Memorial School	60

# 4.2 Noise

4.2.1 Noise sensitive receivers (NSR) in the surrounding area include domestic premises, educational institutions, hospitals and other medical institutions, places of worship, libraries, law courts, performing arts centres and auditoria. The main noise sensitive receivers in the vicinity of the Designated Project are listed below:

NSR	Estimated Shortest Distance to Alignment (m)
Ma Kwu Lam	110
Tai Tung	45
Nga Yiu Tau	130
Sai Keng Tsuen	20
Lei Ling Ha San Wai	70
Kei Ling Ha Lo Wai	40
Barbeccue/Picnic Area	5
Long Keng	45
Wong Chuk Wan	20
Village Houses along Tai Mong Tsai Road	5
Barbecue/Picnic Area	5
Fui Yiu Ha	5
Star Plaza	10
Sai Kung Rural Committee	50
Sai Kung Public School	10
Buildings along Po Tung Road	5
Sai Kung Garden	5
Sai Kung Lok Yuk Kindergarten	20

NSR	Estimated Shortest Distance to Alignment (m)
The Sai Kung Jockey Club Town Hall	5
Sai Kung Sung Tsun Catholic Primary School	70
Sai Kung Interim Housing	10
Builingame Garden	30
Hunlicar Garden	30
Sha Ha	5
New Beach Resort Hotel	5
Chuk Yeung Road	35
Luna House	15
Violet Garden	70
Hopes Villa	40
Lake Side Garden	15
Fui Yiu Ha	10
Buildings along See Cheung Street	5
Buildings along Man Nin Street	35
Sai Kung Hoi Pong Square	20
Siu Yat Building	15
Lee Siu Yam Memorial School	60

# 4.3 Water Quality

4.3.1 The southern part of the alignment along Sai Sha Road passes through designated Water Gathering Grounds.

#### 4.4 Ecology

4.4.1 Ma On Shan Country Park, Sai Kung West Country Park, conservation areas and coastal protection areas are in the surrounding area along Sai Sha Road and Tai Mong Tsai Road. Also, there are portions of the cycle track falling within the boundary of these ecologically sensitive areas.

# 4.5 Landscape and Visual

- 4.5.1 The cycle track running alongside Sai Sha Road has fine scenic views, including natural areas of Ma On Shan Country Park and Sai Kung West Country Park.
- 4.5.2 Portions of the cycle track lie within the existing developed Sai Kung Town.

#### 4.6 Cultural Heritage

4.6.1 Sha Ha Archaeological Site exists in Sai Kung Town and a portion of the cycle track alignment passes through it at grade.

#### 4.7 Hazard to Life

4.7.1 Ma On Shan Water Treatment Works PHI exists within approximately 500m of the cycle track.

# 5. ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN AND ANY FURTHER ENVIRONMENTAL IMPLICATIONS

#### 5.1 Construction Phase

Air Quality

- 5.1.1 In order to prevent adverse impacts on air quality, the following mitigation measures will be put in place.
  - Stockpiles of dusty material will not extend beyond site boundaries.
  - In the process of material handling, any material which has the potential to create dust will be treated with water or sprayed with a wetting agent where practicable.
  - Any vehicle with an open load compartment used for transferring dusty materials off-site will have properly fitted side and tail boards.
  - Stockpiles of sand and aggregate will be enclosed on three sides and water sprays will be used to dampen stored materials and when receiving raw material.
  - The site will be frequently cleaned and watered to minimise fugitive dust emissions.
  - Motorised vehicles will be restricted to a maximum speed of 8km/hr and shall be confined to designated haul roads which will be surfaced with hardcore.

#### Noise

- 5.1.2 If construction works are to be carried out during restricted hours (i.e. between 1900 0700 hours on weekdays and Saturdays, or at any time during Sundays and Public Holidays), the contractor will be required to apply for a Construction Noise Permit (CNP) under the Noise Control Ordinance, prior to execution of construction works.
- 5.1.3 In order to prevent adverse noise impacts, the following general mitigation measures will be put in place.
  - Plant operated on site should be well maintained and serviced regularly.
  - Subject to such working constraints as power supply, safety and obstruction of proposed works, mobile plant will be sited as far away from the nearby NSRs as practicable.
  - Noisy activities will be planned and scheduled to be undertaken during appropriate time periods to minimise potential noise impacts at nearby NSRs. Noisy construction activities will be scheduled to take place at noise-tolerant time periods (e.g. lunch time).
  - Materials stockpiles and other massive structures (such as temporary site offices) will be effectively utilised, where possible, to screen noise from construction activities.
  - Noisy plant or processes will be replaced by quieter alternatives where possible.
     For instance, silenced diesel and gasoline generators and power units, as well as silenced and super-silenced air compressors will be selected for use, also, dump trucks may be replaced by quieter lorries.
  - Where necessary, noise barriers and enclosures will be employed to minimise noise impact to NSRs.

#### Water Quality

- 5.1.4 In order to prevent adverse impacts on water quality, the following general mitigation measures will be put in place.
  - Surface run-off from the construction sites will be directed into storm drains via adequately designed wastewater treatment facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers will be provided on site to properly direct stormwater to such facilities.
  - Silt removal facilities, channels and manholes will be maintained and the deposited silt and grit will be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.
  - Open stockpiles of materials on site will be avoided or where unavoidable covered with tarpaulin or similar fabric during rainstorms. Measures will be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.
  - Manholes (including any newly constructed ones) will always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system.
  - Where possible, works entailing soil excavation will be minimised during the rainy season (April to September).
  - Final earthworks surfaces will be well compacted and hydroseeded following completion to prevent erosion.
  - All vehicles and plant will be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads.
  - During construction works, chemical toilets will be provided for the use of site staff.
     These will be provided by a licensed contractor, who will be responsible for appropriate disposal and maintenance of the effluent.
  - All fuel tanks and chemical storage shall be sited on sealed areas and provided with locks. The storage areas shall be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled oil, fuel and chemicals from reaching the receiving waters. Drainage from oil filling points and any areas where fuels and lubricants are used will be connected to storm drains via a petrol interceptor.

#### Waste Management

- 5.1.5 Waste arising from construction will largely consist of spoil generated during earthworks, and general construction waste/surplus materials.
- 5.1.6 As the overall volume of excavation is low, it is intended that the majority of excavated material would be reused in site formation works.
- 5.1.7 Inert construction and demolition (C&D) waste will be stored separately. Any part which cannot be reused in the works will be transported to a Public Fill Bank or Barging Point for other beneficial reuses.

- 5.1.8 The following specific measures will be implemented to reduce the quantities of C&D waste material that will require landfill disposal:
  - Use waste haulier authorised or licensed to collect specific category of waste;
  - Waste haulier should obtain the necessary registration and licences under the Waste Disposal Ordinance and the Waste Disposal (Chemical Waste) (General) Regulation from the Environmental Protection Department;
  - Nomination of an approved person, such as a site manager, to be responsible for good site practice, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;
  - Training of site personnel in proper waste management and chemical waste handling procedures;
  - Provision of sufficient waste disposal points and regular collection for disposal;
  - Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;
  - Separation of chemical wastes for special handling and appropriate treatment at a licensed facility;
  - Regular cleaning with maintenance programme for drainage systems, sumps and oil interceptors;
  - A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites);
  - In order to monitor the disposal of C&D material and solid wastes at public filling facilities and landfills, and control fly-tipping, a trip-ticket system shall be implemented by the Contractor, in accordance with the contract and the requirements of WBTC 31/2004 "Trip Ticket System for Disposal of Construction and Demolition Material".
  - A Waste Management Plan (WMP) shall be prepared and this WMP shall be submitted to the Engineer for approval. The WMP will be in accordance with WBTC No. 19/2005.
  - Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;
  - To encourage collection of aluminium cans, paper waste and plastic bottles by individual collectors, separate labelled bins shall be provided to segregate this wastes from other general refuse generated by the work force;
  - Any unused chemicals or those with remaining functional capacity shall be recycled;
  - Use of reusable non-timber formwork to reduce the amount of C&D material; and
  - Proper storage and site practices to minimise the potential for damage or contamination of construction materials.

#### **Ecology**

5.1.9 The mitigation measures that are to be put in place to minimise the impacts on air quality, noise and water quality will also help to minimise any impacts on ecology. Potential impacts will be evaluated and any further mitigation measures will be identified under the detailed EIA study.

#### Landscape and Visual Impacts

5.1.10 A detailed tree survey will be carried out as part of the detailed design and EIA. The design will be modified to include or avoid existing trees where feasible. Landscape planting will be incorporated.

Cultural Heritage

5.1.11 Should an archaeological deposit be discovered, mitigation measures should be designed.

Hazard to Life

5.1.12 The hazard impact on the labourers is not expected to be significant. Nevertheless, if any necessary mitigation measures are identified in the Environmental Impact Assessment, they will be implemented.

#### 5.2 Operational Phase

Air Quality

5.2.1 Air quality impact during operation of the project is not anticipated, and hence no specific mitigation measures are required. No significant increase in road traffic is predicted.

Noise

5.2.2 No noise impact is expected during the operation phase and hence no specific mitigation measures are required. No significant increase in road traffic noise is predicted.

Water Quality

5.2.3 Water quality impact is not expected to be significant during the operation phase. Approval will be required from the Water Supplies Department to ensure that there are no impacts upon the functioning of the Water Gathering Grounds.

#### Waste Management

5.2.4 Waste collection facilities (e.g. litter bins) will be included in the design of the supporting facilities, and at regular intervals along the route. The Government Department responsible for managing the facilities will be responsible for arranging for regular collection of litter from these facilities. Due to the nature of the activities, it is likely that a significant proportion of the waste generated may be drinks containers. Separate collection bins will be provided for plastic drinks bottles and drinks cans, which will facilitate recycling of these waste streams.

**Ecology** 

5.2.5 Further measures to enhance habitats will be examined under the detailed EIA Study.

Landscape and Visual Impacts

5.2.6 A detailed tree survey will be carried out as part of the detailed design and EIA. The design will be modified to include or avoid existing trees where feasible. Landscape planting will be incorporated.

Cultural Heritage

5.2.7 No impacts are predicted and hence no specific mitigation measures are required.

#### Hazard to Life

5.2.8 The cyclists only trespass the Consultation Zones of Potentially Hazardous Installation and the impact will not be significant. Nevertheless, if any necessary mitigation measures are identified in the Environmental Impact Assessment, they will be implemented.

# 6. POSSIBLE SEVERITY, DISTRIBUTION AND DURATION OF ENVRIOMENTAL EFFECTS

- 6.1.1 The construction impacts are expected to be short-term and localised. While air quality, noise, water quality, ecology, hazard to life, landscape and visual and the effect on Sha Ha Archaeological Site which are the potential environmental impacts during construction are not expected to be significant with the implementation of the mitigation measure proposed in this project profile and in the Environmental Impact Assessment.
- 6.1.2 The long term impacts during operation phase of the project are not expected to be significant with the implementation of the mitigation measures proposed in this project profile and any further measures identified in the Environmental Impact Assessment.
- 6.1.3 The project is not expected to have any further implications but will be of beneficial to the public as the cycle track is intended mainly for recreation purpose and will be designed to enhance the environment.

#### 7. USE OF PREVIOUSLY APPROVED EIA REPORTS

7.1.1 No previously approved EIA report has been referred to in the preparation of the Project Profile.

