



## 11. LANDSCAPE & VISUAL IMPACT

### 11.1 Introduction

11.1.1 This section assesses the potential landscape and visual impacts arising from the proposed construction and upgrading of the sewage collection, treatment and disposal facilities, together with the mitigation measures proposed to alleviate the impacts.

11.1.2 The assessment has based on the criteria and guidelines stated in Annexes 10 and 18 of the EIAO-TM and EIAO Guidance Note No. 8/2010 for evaluating and assessing landscape and visual impacts and has covered the scope outlined in Section 3.4.8 of the EIA Study Brief.

### 11.2 Project Summary

11.2.1 The proposed works under the Project comprises:

- (a) Expansion and upgrading of Tai O STW which includes 0.26ha site formation by reclamation, construction of a seawall and a 130m long submarine outfall, upgrading of the existing level of sewage treatment to provide secondary treatment with a design capacity of 2,750m<sup>3</sup>/day, and construction of effluent reuse facilities;
- (b) Improvement of the existing sewers at Tai O and provision of new sewers to unsewered areas/villages where practicable, including Wang Hang Tsuen; Leung Uk Tsuen, Nam Chung Tsuen and Fan Kwai Tong; the unsewered area of Tai O Town and Shek Tsai Po; and
- (c) Hang Mei at the east of the catchment area is remote and a SPS is proposed to convey flows to the existing sewers near Lung Tin Estate. The villages at the south of the catchment area are nearly 1 km from existing sewers and therefore a pumping station at Fan Kwai Tong is also proposed.

11.2.2 Under Part I, Schedule 2 of the EIAO, the proposed Expansion and Upgrading of Tai O STW consists of the following designated projects:

- (a) Construction of submarine outfall of Tai O STW – F.6 which includes construction of *A submarine sewage outfall*;
- (b) Effluent reuse facilities within the Tai O STW – under Item F.4 which includes *an activity for the reuse of treated sewage effluent from a treatment plant*.
- (c) Sewer works at Nam Chung Tsuen – Item Q.1 which includes construction of sewers within a conservation area.

11.2.3 The proposed sewerage works at Tai O is shown in **Figure 2.1**, **Figure 2.1A** and **Appendix 11.6**. The proposed general layout plan of the proposed Tai O STW, Hang Mei SPS and Fan Kwai Tong SPS are shown in **Figure 2.2**, **Figure 2.4** and **Figure 2.5** respectively.

#### Proposed Sewers Works

11.2.4 The proposed sewers works will be laid underground along the existing carriageway, footpaths and paved tracks. The existing site photos for the proposed sewers works are shown in **Appendix 11.3**. A section of sewers works at Nam Chung Tsuen will be constructed within “Conservation Area” zoned under the Approved Tai O Fringe Outline Zoning Plan (OZP) No. S/I-TOF/2 as shown in **Figure 2.1A**. However, this section of sewers will be laid underground along the existing footpaths instead of being constructed within the mangrove replanting area. The existing site photo of proposed location of sewers works at Nam Chung Tsuen is shown in **Appendix**



**11.3.** During the construction stage, local areas may experience a slight adverse visual impact. However the impact will be temporary and insignificant as the construction works will be carried out section by section in a local area with a short period of time, in order to reduce the disturbance to the surrounding areas and nearby residents. The works area will be reinstated to its original conditions. Landscape and visual impact during operation stage of the sewers is considered to be negligible.

### **Proposed Sewage Pumping Stations and Sewage Treatment Works**

11.2.5 Landscape and visual impact during construction and operation stage of the proposed Tai O STW, Hang Mei SPS and Fan Kwai Tong SPS will be assessed in the following sections.

### **11.3 Review of Planning and Development Control Framework**

11.3.1 A review of the existing and planned development framework for the proposed works and their surroundings has been considered, in order to identify any issues within the neighbouring planned land uses, and therefore to identify potential sensitive receivers, and to ensure a high compatibility between the proposed project and the surroundings.

### **Proposed Expansion and Upgrading of Tai O STW**

11.3.2 According to the approved Tai O Fringe Outline Zoning Plan No. S/I-TOF/2 as presented in **Appendix 2.1**, the proposed Tai O STW is located in the area zoned "Other Specified Uses (Sewage Treatment Works)". Areas zoned "Green Belt (GB)", "Coastal Protection Area (CPA)", "Conservation Area (CA)", "Government, Institution or Community (G/IC)", "Open Space (O)" are found within the assessment area, which is within 500m from the proposed site.

11.3.3 The proposed Tai O STW is located within "Other Specified Uses (Sewage Treatment Works)" zone, which STW is always permitted. According to the Notes of the OZP, no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall exceed a maximum building height of 2 storeys or the height of the building which was in existence on the date of the first publication in the Gazette of the notice of the draft development permission area plan, whichever is the greater. Planning application for minor relaxation of building height to the Town Planning Board is required if the proposed Tai O STW exceeds the height restriction as stipulated under the OZP. Hence, the proposed Tai O STW, with introduction of two-storey superstructure buildings, has no conflict to the relevant planning and development control framework.

### **Proposed Hang Mei SPS**

11.3.4 According to the OZP, the proposed Hang Mei SPS is located in the area zoned "Green Belt (GB)". Areas zoned "Village Type Development (V)", "Conservation Area (CA)", "Open Space (O)", "Government, Institution or Community (G/IC)" and "Green Belt (GB)" are found within the assessment area, which is within 500m from the proposed site.

11.3.5 The proposed Hang Mei SPS is located within "Green Belt (GB)", which is primarily intended for defining the limits of development areas by natural features and to preserve the existing topography and natural vegetation as well as to provide passive recreational outlets.

11.3.6 The proposed sewage pumping station is considered as "Public Utility Installation". According to the Notes of the OZP, it may be permitted with or without conditions on



application to the Town Planning Board under section 16 of the Town Planning Ordinance.

### **Proposed Fan Kwai Tong SPS**

- 11.3.7 According to the OZP, the proposed Fan Kwai Tong SPS is located in the area zoned "Village Type Development (V)". Areas zoned "Government, Institution or Community (G/IC)", "Green Belt (GB)", "Conservation Area (CA)", and "Open Space (O)" are found within the assessment area, which is within 500m from the proposed site.
- 11.3.8 The proposed Fan Kwai Tong SPS is located within "Village Type Development (V)", which is primarily intended for development of Small Houses by indigenous villagers. It is also intended to concentrate village type development within this zone for a more orderly development pattern, efficient use of land and provision of infrastructures and services. Selected commercial and community uses serving the needs of the villagers and in support of the village development are always permitted on the ground floor of a New Territories Exempted House.
- 11.3.9 The proposed sewage pumping station is considered as "Public Utility Installation". According to the Notes of the OZP, it may be permitted with or without conditions on application to the Town Planning Board under section 16 of the Town Planning Ordinance.

### **Proposed Sewers Works**

- 11.3.10 According to the OZP, the proposed sewers works are mainly located in the area zoned "Village Type Development (V)", which is primarily intended for development of Small Houses by indigenous villagers. It is also intended to concentrate village type development within this zone for a more orderly development pattern, efficient use of land and provision of infrastructures and services. Selected commercial and community uses serving the needs of the villagers and in support of the village development are always permitted on the ground floor of a New Territories Exempted House.
- 11.3.11 A section of sewers works at Nam Chung Tsuen will be constructed within "Conservation Area (CA)", which is intended to protect and retain the existing natural landscape, ecological or topographical features of the area for conservation, educational and research purposes and to separate sensitive natural environment such as Country Park from the adverse effects of development. However, this section of sewers will be laid underground along the existing footpaths instead of being constructed within the mangrove replanting area. The existing site photo of proposed location of sewers works at Nam Chung Tsuen is shown in **Appendix 11.3**.
- 11.3.12 The proposed sewers works within "Conservation Area (CA)" zone in Nam Chung Tsuen are considered as "Public Utility Installation". According to the Notes of the OZP, it may be permitted with or without conditions on application to the Town Planning Board under section 16 of the Town Planning Ordinance.

## **11.4 Relevant Legislations, Standards & Guidelines**

- 11.4.1 The following Environmental Legislation and Standards are considered:
- Draft Tai O Town Centre Outline Zoning Plan No. S/I-TOTC/1;
  - Approved Tai O Fringe Outline Zoning Plan No. S/I-TOF/2;



- EIAO, Annexes 10 and 18 of EIAO Technical Memorandum and EIAO Guidance Note No. 8/2010 – Preparation of Landscape and Visual Impact Assessment under the Environmental Impact Assessment Ordinance;
- The Forests and Countryside Ordinance (Cap 96)
- The Forestry Regulations – made under Section 3 of The Forests and Countryside Ordinance (Cap 96), and Government General Regulation 740;
- DEVB TCW No. 7/2015 - Tree Preservation;
- ETWB TCW No. 5/2005 - Protection of natural streams/rivers from adverse impacts arising from construction works;
- ETWB TCW No. 29/2004 - Registration of Old and Valuable Trees, and Guidelines for their Preservation;
- ETWB TCW No. 14/2004 - Maintenance of Stormwater Drainage Systems and Natural Watercourses;
- DEVB TCW No. 6/2015 - Maintenance of Vegetation and Hard Landscape Features;
- ETWB TCW No. 7/2002 - Tree Planting in Public Works;
- DSD Technical Circular No. 9/2006 - Vetting Committee on Aesthetic Design of Pumping Station Buildings, and Guidelines on Aesthetic Design of Pumping Station Buildings;
- Hong Kong Planning Standards and Guidelines, Chapter 4 - Recreation, Open Space & Greening, Chapter 10 – Conservation, and Chapter 11 - Urban Design Guidelines;
- Landscape Value Mapping of Hong Kong; and
- Protection of Endangered Species of Animals and Plants Ordinance Cap. 586

## 11.5 Landscape and Visual Impact Assessment Methodology

11.5.1 The landscape and visual impacts are assessed separately for the construction phase and operation phase. The methodologies to assess landscape and visual impacts are described in the following paragraph.

### Methodology of Assessment of Landscape Impacts

11.5.2 The assessment of landscape impacts involves the following procedures:

- Identification of Baseline Landscape Resource (LR) and Landscape Character Area (LCA): A desktop research study on aerial photos and topographical maps, followed by site visit and photo-taking, is conducted to identify the baseline LR and LCA found within the study boundary, which is within 500m from the proposed site as presented in **Figures 11.1 to 11.2, 11.4 to 11.5, 11.7 to 11.8** for proposed Tai O STW, Hang Mei SPS and Fan Kwai Tong SPS respectively. A desktop research study on aerial photos and topographical maps, followed by site visit and photo-taking, is also conducted to identify the baseline LR and LCA found along the locations of proposed sewers works. The photographic records of the locations of proposed sewers works are provided in **Appendix 11.3**.
  - Landscape Resource (LR) considered including: natural and secondary woodland; amenity planting; scrubland and grassland; natural topography; significant planning designation, e.g. Country Park or Green Belt; and heritage or cultural features.
  - Physical components related to the visual amenity, cultural association and heritage value of the Landscape Character Area (LCA) are



considered, elements including: land use; public use of land; extent of vegetation; age of landscape; cultural, heritage and religious elements; scale and type of buildings; pattern of settlement; location and topography; and extent of natural compare to man-made.

- Assessment of “Sensitivity” of LR and LCA: The sensitivity of LR and LCA is assessed based on the factors including (i) whether the resource is common or rare; (ii) whether it is considered to be of local, regional, national or global importance; (iii) whether there are any statutory or regulatory limitations/requirements relating to the resource; (iv) the quality of the resource; (v) the maturity of the resource, and (vi) the ability of the resource to accommodate changes. The sensitivity of LR and LCA is rated as high, medium or low:
  - High – Important components of landscape of particularly distinctive character susceptible to relatively small changes
  - Medium – A landscape of moderately valued characteristics reasonably tolerant of change
  - Low – A relatively unimportant landscape, the nature of which is largely tolerant to change
- Assessment of “Magnitude of Change” for landscape impacts: The “Magnitude of Change” is assessed based on the factors including (i) the physical extent of impact; (ii) the landscape context of impact and (iii) the timescale of impact. The magnitude of change is rated as large, intermediate, small and negligible:
  - Large – Notable permanent change in the landscape characteristics over an extensive area ranging to very intensive changes over a more limited area
  - Intermediate – Moderate change in a localised area
  - Small – Virtually imperceptible change or temporary change
  - Negligible – Virtually no change in the area
- Assessment of “Impact Significance Threshold before Mitigation” for landscape impacts: The degree of significance of the landscape impacts is determined based on the “Sensitivity” and “Magnitude of Change” for various LR and LCA, as shown in **Table 11.1**. The degree of significance is divided into four thresholds:
  - Substantial – Adverse or beneficial impact where the proposal would cause significant deterioration or improvement in existing landscape quality
  - Moderate – Adverse or beneficial impact where the proposal would cause noticeable deterioration or improvement in existing landscape quality
  - Slight – Adverse or beneficial impact where the proposal would cause a barely perceptible deterioration or improvement in existing landscape quality
  - Insubstantial – No discernible change in the existing landscape quality





**Table 11.1 : Matrix for Impact Significance Threshold before Mitigation**

| Magnitude of Change | Sensitivity            |                        |                        |
|---------------------|------------------------|------------------------|------------------------|
|                     | High                   | Medium                 | Low                    |
| Large               | Substantial            | Moderate / Substantial | Moderate               |
| Intermediate        | Moderate / Substantial | Moderate               | Slight / Moderate      |
| Small               | Moderate               | Slight/Moderate        | Insubstantial / Slight |
| Negligible          | Insubstantial          | Insubstantial          | Insubstantial          |

- Identification of Potential Mitigation Measures: The potential measures to be implemented during the construction and operation phases are proposed in order to minimize unavoidable adverse impacts and/or to generate beneficial long-term impacts.
- Identification of “Residual Impact Significance Threshold after Mitigation” for landscape impacts: The accumulative influence to LR and LCA after full implementation of the proposed mitigation measures is reviewed.

### **Methodology of Assessment of Visual Impacts**

11.5.3 The assessment of visual impacts involves the following procedures:

- Identification of zone of visual influence/visual envelope and visually sensitive receivers groups (VSRs): Visual envelope is the area from which any part of the proposed project can be seen and may contain areas, which are fully visible, partly visible and non-visible from the project. The VSRs are those within the visual envelope whose views may be affected by the proposed works. **Figures 11.3, 11.6 and 11.9** present the extent of the visual envelope and the identified VSRs for the proposed Tai O STW, Hang Mei SPS and Fan Kwai Tong SPS respectively.
- Assessment of “Sensitivity” of VSRs: The sensitivity of VSRs is assessed based on the factors including (i) value and quality of existing views; (ii) availability and amenity of alternative views; (iii) type and estimated number of receiver population; (iv) duration or frequency of view; and (v) degree of visibility. The sensitivity of VSRs is rated as high, medium or low:
  - High – The VSR is highly sensitive to any change in their viewing experience
  - Medium – The VSR is moderately sensitive to any change in their viewing experience
  - Low – The VSR is only slightly sensitive to any change in their viewing experience
- Assessment of “Magnitude of Change” for visual impacts: The “Magnitude of Change” is assessed based on the factors including (i) compatibility of the proposed project with the surrounding landscape; (ii) duration of impacts during construction and operation stages; (iii) scale of development and distance of the source of impact from the viewer; (iv) reversibility of change; and (v) potential blockage of the view. The magnitude of change is rated as large, intermediate, small and negligible:
  - Large – The VSR would suffer a major change in their viewing experience



- Intermediate – The VSR would suffer a moderate change in their viewing experience
- Small – The VSR would suffer a small change in their viewing experience
- Negligible – The VSR would suffer no discernible change in their viewing experience
- Assessment of “Impact Significance Threshold before Mitigation” for visual impacts: The degree of significance of the visual impacts is determined based on the “Sensitivity” and “Magnitude of Change” for the VSRs, as shown in **Table 11.1**. The degree of significance is divided into four thresholds:
  - Substantial – Adverse or beneficial impact where the proposal would cause significant deterioration or improvement in existing visual quality
  - Moderate – Adverse or beneficial impact where the proposal would cause noticeable deterioration or improvement in existing visual quality
  - Slight – Adverse or beneficial impact where the proposal would cause a barely perceptible deterioration or improvement in existing visual quality
  - Insubstantial – No discernible change in the existing visual quality
- Identification of Potential Mitigation Measures: The potential measures to be implemented during the construction and operation phases are proposed in order to minimize unavoidable adverse impacts and/or to generate beneficial long-term impacts. The responsible agencies for the funding, implementation, management and maintenance of the mitigation measures have been identified.
- Identification of “Residual Impact Significance Threshold after Mitigation” for visual impacts: The accumulative influence to VSRs at Year 10 of the operation stage after full implementation of the proposed mitigation measures in Environmental Monitoring and Audit Manual is reviewed.

## 11.6 Existing Landscape and Visual Baseline

### Landscape Baseline

#### *Expansion and Upgrading of Tai O STW*

- 11.6.1 Existing Landscape Resource (LR) and Landscape Character Area (LCA) are identified within the study boundary, which is within 500m from the proposed Tai O STW site. The locations of the LRs and LCAs are shown in **Figure 11.1** and **Figure 11.2** respectively. Photographic records of LRs and LCAs are shown in **Figure 11.10** to **Figure 11.13**.
- 11.6.2 From the Tree Survey Report under “Agreement No. CE31/2007(DS) Upgrading of Cheung Chau and Tai O Sewage Collection, Treatment and Disposal Facilities – Investigation” (hereinafter referred to the Tree Survey) as appended in **Appendix 11.1**, one existing tree is identified within the proposed site of the proposed Tai O STW. Furthermore, during the Ecological Baseline Survey conducted in May - October 2011, one rare plant species of conservation interest was found on the grassy bund of a small abandoned fish pond along the southern side of Tai O Road within the study boundary.
- 11.6.3 Sensitivity of LRs with relatively more important landscape character including mangrove, marsh / reedbed, pond, coastal area and village (i.e. LR1, LR2, LR3 and LR7, LR11) are considered as “High”. The sensitivity of woodland (LR4) is also considered as “High” since it is well developed and its estimated age is more than 20 years. Sensitivity of LRs of landscaping nature including shrubland, grassland



with plants/vegetations in common species and waterbody (i.e. LR5, LR6 and LR8) are considered as “Medium”. Sensitivity of developed area is considered as “Low” owing to its large extent and higher capability to accommodate changes. The description and summary of sensitivity of each LRs is presented in **Table 11.2**.

**Table 11.2 : Description of Identified Landscape Resource (LR) of the proposed Tai O STW**

| ID  | Landscape Feature | Dominant Species   | Sensitivity |
|---|-------------------|--|-------------|
| LR1<br>(Photo refer to <b>Figure 11.10</b> )<br>(Location refer to <b>Figure 11.1</b> ) | Mangrove          | <p>Mangroves were found in the stands around the pond at Po Chue Tam. A total of 20 plant species were recorded. The front part of the mangrove stands was dominated by two pioneer mangrove species <i>Kandelia obovata</i> and <i>Avicennia marina</i>, reaching a height of 2 – 4 m.</p> <p>Although they are common species, they have low ability to accommodate changes. They will increase in size if given sufficient time and proper sediment and tidal conditions.</p> <p>The mangroves contribute significantly to the coastline landscape character, as a result the landscape quality and value is considered to be high.</p> <p>They are regional important components of landscape particularly susceptible to relatively small changes.</p>  | High        |
| LR2<br>(Photo refer to <b>Figure 11.10</b> )<br>(Location refer to <b>Figure 11.1</b> ) | Marsh / Reedbed   | <p>A patch of marsh with frequent shallow water and featuring reeds, wetland ferns and sedges was identified within the study Area, to the north of Tai O Creek. The marsh is an area of abandoned salt pan. Marsh ferns including <i>Mangrove Fern</i> <i>Acrostichum aureum</i> and <i>Interrupted Tri-vein Fern</i> <i>Cyclosorus interruptus</i> and aquatic vegetable <i>Eleocharis sp.</i> were the most abundant plants. Small patches of reedbed dominated by <i>Common Reedgrass Phragmites australis</i> scattered in the marsh as well.</p> <p>They are mature. They have evolved since the cessation of salt-extraction activity, &gt;20 years. They have the potential ability to support a variety of uncommon species (especially birds).</p> <p>As a result the landscape quality and value is considered to be high.</p> <p>They are regional important components of landscape particularly susceptible to relatively small changes.</p> | High        |





| ID  | Landscape Feature | Dominant Species   | Sensitivity |
|---|-------------------|--|-------------|
| LR3<br>(Photo refer to Figure 11.10)<br>(Location refer to Figure 11.1) | Pond              | <p>The pond at Po Chue Tam is an artificial tidal lagoon in the estuary of Tai O Creek. Mangroves densely occupied its bund, in particular in the northern and western sides. <i>Kandelia obovata</i> and <i>Hibiscus tiliaceus</i> were the dominant species.</p> <p>Although the mangrove species are common, it is linked to adjacent mangrove and agricultural land.</p> <p>It would change into marsh or mangrove habitat given sufficient time and left the area without active management. As a result the landscape quality and value is considered to be high.</p> <p>It is a local important component of landscape particularly susceptible to relatively small changes.</p>  | High        |
| LR4<br>(Photo refer to Figure 11.10)<br>(Location refer to Figure 11.1) | Woodland          | <p>Woodland was found in foothills and ravines of Fu Shan, Sze Shan and at a small elevated area at Po Chue Tam behind the Yeung Hau Temple. This habitat had a semi-closed to closed canopy, which ranged from 8m to 12 m in height depending on the local topography and the canopy species. Common tree species such as <i>Celtis sinensis</i>, <i>Mallotus paniculatus</i> and <i>Pinus elliotii</i> were found on this canopy. Judging from the height and species composition of the canopy, woodland within the Study Area is estimated to have an age of more than 20 years. The mid-storey of this habitat was occupied by shrubs (e.g. <i>Lantana camara</i>, <i>Litsea rotundifolia</i>, <i>Ligustrum sinense</i> and <i>Psychotria asiatica</i>) and small to medium sized trees (e.g. <i>Aporosa dioica</i>, <i>Sterculia lanceolata</i> and <i>Phyllanthus emblica</i>), and understory occupied by low lying herbs including <i>Centella asiatica</i> and <i>Torenia benthamiana</i> of low density due to the shaded condition. Besides, climbers such as <i>Ampelopsis cantoniensis</i>, <i>Celastrus hindsii</i> and <i>Zanthoxylum nitidum</i> and ferns <i>Paederia scandens</i> were commonly found to be intermingled with the branches of trees and shrubs.</p> <p>It has low ability to accommodate changes. It would take at least 30 years for the woodland to be re-created.</p> <p>It has a high potential value to become mature woodland if given sufficient time and protection from disturbances such as hillfires. As a result the landscape quality and value is considered to be high.</p> <p>It is a regional important component of landscape particularly susceptible to relatively small changes.</p> | High        |



| ID  | Landscape Feature | Dominant Species  | Sensitivity |
|---|-------------------|---|-------------|
| LR5<br>(Photo refer to Figure 11.10)<br>(Location refer to Figure 11.1) | Shrubland         | <p>As a stage in the natural succession towards young woodland, the habitat of shrubland within the Study Area always occurs adjacent to woodland, either on a higher elevation or in a more close vicinity to villages where human activities may impede its succession. It had similar plant composition to the surrounding woodland but with proportionally more common shrub species (e.g. <i>Litsea rotundifolia</i> and <i>Psychotria asiatica</i>), pioneer trees (e.g. <i>Ficus hispida</i>, <i>Pandanus tectorius</i> and <i>Rhus chinensis</i>) and woody climbers (e.g. <i>Tetracera asiatica</i> and <i>Zanthoxylum nitidum</i>), with an average height ranging from 2 m to 3 m. The understorey vegetation of this habitat includes herbs (e.g. <i>Liriope spicata</i> and <i>Torenia benthamiana</i>) and ferns (e.g. <i>Blechnum orientale</i>).</p> <p>It has low to moderate potential value to become mature shrubland and then young woodland if given sufficient time and protection from disturbance. As a result the landscape quality and value is considered to be medium.</p> <p>It has moderate diversity of plants.</p> | Medium      |
| LR6<br>(Photo refer to Figure 11.10)<br>(Location refer to Figure 11.1) | Grassland         | <p>The upland area of Fu Shan and Sze Shan within the Study Area were dominated by grassland. Because of the bouldered steep terrain and grassy nature, this habitat is generally open and simple in structure and had an average plant height of 0.5 m to 1 m. Common herbs (e.g. <i>Digitaria sanguinalis</i>), shrubs (e.g. <i>Melastoma candidum</i>) and ferns (e.g. <i>Dicranopteris pedata</i>) grew extensively in this area. Most of the species are wind resistant and are well adapted to the relatively dry environment. Isolated trees such as <i>Phoenix hanceana</i>, <i>Phyllanthus emblica</i> and <i>Rhus spp.</i> were also spotted within the habitat.</p> <p>The potential value of grassland is subject to practice of management and level of disturbance (e.g. hill fires). As a result the landscape quality and value is considered to be medium.</p> <p>It is young and immature.</p>  | Medium      |
| LR7<br>(Photo refer to Figure 11.10)<br>(Location refer to Figure 11.1) | Coastal Area      | <p>The coastal area along the northern fringe of the Study Area consisted of rocky shore (hard bottom), boulder shore (soft bottom), as well as a short section of artificial seawall at the proposed upgraded Tai O STW and its vicinity. A total of 22 plant species were recorded. Most of them were common coastal plants such as <i>Cerbera manghas</i>, <i>Hibiscus tiliaceus</i>, <i>Portulaca oleracea</i>, and <i>Wedelia biflorab</i>.</p> <p>The man-made structures are re-creatable.</p> <p>As it contributes to landscape character to the coastal area, the landscape quality and value is considered to be high.</p> <p>It is a regional important component of landscape particularly susceptible to relatively small changes.</p>   | High        |



| ID   | Landscape Feature | Dominant Species   | Sensitivity |
|--|-------------------|--|-------------|
| LR8<br>(Photo refer to Figure 11.10)<br>(Location refer to Figure 11.1)  | Waterbody         | Seawater body at the north of Tai O.<br>It is common over the assessment area.<br>It has moderate ability to accommodate changes.<br>Although it is common over the assessment area, it contributes to the landscape character of coastal area, the landscape quality and value is considered to be medium.  | Medium      |
| LR11<br>(Photo refer to Figure 11.10)<br>(Location refer to Figure 11.1) | Village           | Village areas including the north of Shek Tsai Po and the north of the stilted houses at Sun Kei.<br>It is important habitat for bird species of conservation interest. The stilted houses contribute to unique landscape character of Tai O. As a result, the landscape quality and value is considered to be high.<br>They are local important components of landscape particularly susceptible to relatively small changes. | High        |
| LR12<br>(Photo refer to Figure 11.11)<br>(Location refer to Figure 11.1) | Developed Area    | Government institutions and public utilities such as Tai O STW and Tai O SPS No. 2.<br>Plant species found in the open spaces were common.<br>They have high ability to accommodate changes. They are man-made structures and are readily re-creatable. As a result, the landscape quality and value is considered to be low.  | Low         |

11.6.4 Sensitivity of LCAs with relatively more important landscape character including natural coastal area, woodland and hillside, village, mangrove / marsh / reedbed (i.e. LCA2, LCA4, LCA5 and LCA7) are considered as “High”. Sensitivity of LCAs of landscaping nature and natural character including waterbody and waterbody (pond or river channel) (i.e. LCA6 and LCA9) are considered as “Medium”. Other LCAs with relatively unimportant landscape character and the nature of which is largely tolerant to change, including institutional and transportation corridor (i.e. LCA1 and LCA3) are considered as “Low”. The sensitivity of each LCA is presented in **Table 11.3**.



**Table 11.3 : Description of Identified Landscape Character Area (LCA) of the proposed Tai O STW**

| ID   | Landscape Character Area | Description  | Sensitivity |
|--|--------------------------|--|-------------|
| LCA1<br>(Photo refer to Figure 11.11)<br>(Location refer to Figure 11.2) | Institutional            | Government institutions and public utilities such as Tai O STW and Tai O SPS No. 2.<br><br>Plant species found in the open spaces were common.<br><br>They have high ability to accommodate changes. They are man-made structures and are readily re-creatable. As a result, the landscape quality and value is considered to be low.  | Low         |
| LCA2<br>(Photo refer to Figure 11.10)<br>(Location refer to Figure 11.2) | Coastal Area with Slope  | The area is composed of natural coastal area at the north-western Tai O and the gentle slope facing the sea along the coast.<br><br>The man-made structures are re-creatable.<br><br>The landscape quality and value is considered to be high.<br><br>It is a regional important component of landscape particularly susceptible to relatively small changes.  | High        |
| LCA3<br>(Photo refer to Figure 11.11)<br>(Location refer to Figure 11.2) | Transportation Corridor  | Footpath and paved access road along Kat Hing Back Street to Po Chue Tam.<br><br>They have high ability to accommodate changes. They are readily re-creatable. As a result, the landscape quality and value is considered to be low.<br><br>They are largely tolerant to change.   | Low         |
| LCA4<br>(Photo refer to Figure 11.10)<br>(Location refer to Figure 11.2) | Woodland and Hillside    | They are mainly woodland and hillside plantation area located around Fu Shan.<br><br>It has low ability to accommodate changes. It would take at least 30 years for the woodland to be re-created.<br><br>They have high potential value to become mature woodland if given sufficient time and protection from disturbances such as hillfires. As a result the landscape quality and value is considered to be high.<br><br>They are regional important components of landscape particularly susceptible to relatively small changes. | High        |
| LCA5<br>(Photo refer to Figure 11.10)<br>(Location refer to Figure 11.2) | Village                  | Village areas including the north of Shek Tsai Po and the north of the stilted houses at Sun Kei.<br><br>It is important habitat for bird species of conservation interest. As a result, the landscape quality and value is considered to be high.<br><br>They are local important components of landscape particularly susceptible to relatively small changes.   | High        |



| ID   | Landscape Character Area          | Description  | Sensitivity |
|--|-----------------------------------|--|-------------|
| LCA6<br><br>(Photo refer to <b>Figure 11.10</b> )<br><br>(Location refer to <b>Figure 11.2</b> ) | Waterbody                         | Seawater body adjacent to Tai O STW.<br><br>It has moderate ability to accommodate changes. It has moderate potential value in general if provided with sufficient time to allow more aquatic species to establish and protection from disturbance.<br><br>The landscape quality and value is considered to be medium.   | Medium      |
| LCA7<br><br>(Photo refer to <b>Figure 11.10</b> )<br><br>(Location refer to <b>Figure 11.2</b> ) | Mangrove / Marsh / Reedbed        | Mangrove / Marsh / Reedbed at north of Sun Kei Street.<br><br>They have low ability to accommodate changes. They will increase in size if given sufficient time and proper sediment and tidal conditions.<br><br>The mangroves contribute significantly to the coastline landscape character, as a result the landscape quality and value is considered to be high.<br><br>They are regional important components of landscape particularly susceptible to relatively small changes. | High        |
| LCA9<br><br>(Photo refer to <b>Figure 11.11</b> )<br><br>(Location refer to <b>Figure 11.2</b> ) | Waterbody (Pond or River Channel) | Pond at Po Chue Tam.<br><br>It has moderate ability to accommodate changes. It has moderate potential value in general if provided with sufficient time to allow more aquatic species to establish and protection from disturbance.<br><br>The landscape quality and value is considered to be medium.   | Medium      |

### ***Proposed Hang Mei SPS***

- 11.6.5 Existing Landscape Resource (LR) and Landscape Character Area (LCA) are identified within the study boundary, which is within 500m from the proposed site of Hang Mei SPS. The locations of the LRs and LCAs are shown in **Figure 11.4** and **Figure 11.5** respectively. Photographic records of LRs and LCAs are shown in **Figure 11.10** to **Figure 11.13**.
- 11.6.6 The Ecological Baseline Survey conducted in May - October 2011 identified that Wild Sensitive-plant (*Chamaecrista leschenaultiana*) was found on the grassy bund of a small abandoned fish pond along the southern side of Tai O Road. The fish pond is located approximately 250m away from the proposed Hang Mei SPS. The Tree Survey as appended in **Appendix 11.1** identifies that there are 2 nos. of existing trees at the proposed site of Hang Mei SPS.
- 11.6.7 Sensitivity of LRs with relatively more important landscape character including waterbody, mangrove, marsh / reedbed, pond and woodland (i.e. LR1, LR2, LR3, LR4 and LR8) are considered as "High". Sensitivity of LRs of landscaping nature including plantation, shrubland, grassland, agricultural land and village (i.e. LR5, LR6, LR9, LR10 and LR11) are considered as "Medium". Sensitivity of LR of developed area (i.e. LR12) is considered as "Low". The description and summary of sensitivity of each LRs is presented in **Table 11.4**.



**Table 11.4 : Description of Identified Landscape Resource (LR) of proposed Hang Mei SPS**

| ID   | Landscape Feature      | Dominant Species  | Sensitivity |
|--|------------------------|---|-------------|
| <p>LR1</p> <p>(Photo refer to <b>Figure 11.11</b>)</p> <p>(Location refer to <b>Figure 11.4</b>)</p> | <p>Mangrove</p>        | <p>Mangroves were found in the stands along the intertidal riparian zones of Tai O Creek. A total of 20 plant species were recorded. The front part of the mangrove stands was dominated by two pioneer mangrove species <i>Kandelia obovata</i> and <i>Avicennia marina</i>, reaching a height of 2-4 m.</p> <p>Although they are common species, they have low ability to accommodate changes. They will increase in size if given sufficient time and proper sediment and tidal conditions.</p> <p>The mangroves contribute significantly to the coastline landscape character, as a result the landscape quality and value is considered to be high.</p> <p>They are regional important components of landscape particularly susceptible to relatively small changes.</p>   | <p>High</p> |
| <p>LR2</p> <p>(Photo refer to <b>Figure 11.11</b>)</p> <p>(Location refer to <b>Figure 11.4</b>)</p> | <p>Marsh / Reedbed</p> | <p>The marsh to the north of Leung Uk Tsuen was dominated by Common Reedgrass <i>Phragmites australis</i> and was therefore a continuous reedbed.</p> <p>They are mature. They have evolved since the cessation of salt-extraction activity, &gt;20 years. They have the potential ability to support a variety of uncommon species (especially birds).</p> <p>They could be enhanced with the clearance of the mangrove seedlings in adjacent area and management of water levels, and therefore having the potential ability to support a variety of uncommon species (especially birds). As a result the landscape quality and value is considered to be high.</p> <p>They are regional important components of landscape particularly susceptible to relatively small changes.</p>  | <p>High</p> |
| <p>LR3</p> <p>(Photo refer to <b>Figure 11.11</b>)</p> <p>(Location refer to <b>Figure 11.4</b>)</p> | <p>Pond</p>            | <p>A group of continuous abandoned fish ponds were located to the east of Sun Ki Street. Bunds of these abandoned fish ponds were colonised by mangroves (e.g. <i>Kandelia obovata</i> and <i>Aegiceras corniculatum</i>), mangrove associates (e.g. <i>Clerodendrum inerme</i>) and other plant species commonly seen in mangrove community (e.g. <i>Derris trifoliata</i> and <i>Vitex rotundifolia</i>). Wild Sensitive-plant (<i>Chamaecrista leschenaultiana</i>) was found on the grassy bund of a small abandoned fish pond along the southern side of Tai O Road.</p> <p>Although the mangrove species are common, it is linked to adjacent mangrove and agricultural land.</p> <p>They would change into marsh or mangrove habitats given sufficient time and left the area without active management. As a result the landscape quality and value is considered to be high.</p> <p>They are local important components of landscape particularly susceptible to relatively small changes.</p> | <p>High</p> |





| ID  | Landscape Feature | Dominant Species   | Sensitivity |
|---|-------------------|--|-------------|
| LR4<br><br>(Photo refer to <b>Figure 11.11</b> )<br><br>(Location refer to <b>Figure 11.4</b> ) | Woodland          | <p>Woodland was found in foothills and ravines behind Hang Mei Tsuen and Wang Hang Village. This habitat had a semi-closed to closed canopy, which ranged from 8m to 12 m in height depending on the local topography and the canopy species. Common tree species such as <i>Celtis sinensis</i>, <i>Mallotus paniculatus</i> and <i>Pinus elliottii</i> were found on this canopy. Judging from the height and species composition of the canopy, woodland within the Study Area is estimated to have an age of more than 20 years. The mid-storey of this habitat was occupied by shrubs (e.g. <i>Lantana camara</i>, <i>Litsea rotundifolia</i>, <i>Ligustrum sinense</i> and <i>Psychotria asiatica</i>) and small to medium sized trees (e.g. <i>Aporosa dioica</i>, <i>Sterculia lanceolata</i> and <i>Phyllanthus emblica</i>), and understory occupied by low lying herbs including <i>Centella asiatica</i> and <i>Torenia benthamiana</i> of low density due to the shaded condition. Besides, climbers such as <i>Ampelopsis cantoniensis</i>, <i>Celastrus hindsii</i> and <i>Zanthoxylum nitidum</i> and ferns <i>Paederia scandens</i> were commonly found to be intermingled with the branches of trees and shrubs.</p> <p>It has low ability to accommodate changes. It would take at least 30 years for the woodland to be re-created.</p> <p>It has a high potential value to become mature woodland if given sufficient time and protection from disturbances such as hillfires. As a result the landscape quality and value is considered to be high.</p> <p>It is a regional important component of landscape particularly susceptible to relatively small changes.</p> | High        |



| ID   | Landscape Feature | Dominant Species   | Sensitivity   |
|--|-------------------|--|---------------|
| <p>LR9</p> <p>(Photo refer to Figure 11.12)</p> <p>(Location refer to Figure 11.4)</p> | <p>Plantation</p> | <p>Plantation within the Study Area was found along Tai O Road. The plantation along Tai O Road comprised trees with varying heights ranging from 3 m to 8 m. The dominant trees were also exotic species, which included <i>Eucalyptus robusta</i>, <i>Bombax ceiba</i>, <i>Archontophoenix alexandrae</i> and <i>Aleurites moluccana</i>. Landscaping plants such as <i>Duranta erecta</i> and <i>Alpinia zerumbet</i> cv. <i>Variegata</i> were found in planters along Tai O Road as well. But grasses (e.g. <i>Apluda mutica</i> and <i>Bidens alba</i>) have begun to spread out and colonised the planters due to the lack of active management.</p> <p>Plantation within the Study Area was also found on the hill slopes behind San Tsuen. The plantation woodland along the hillside behind San Tsuen had a semi-closed canopy at a height of approximately 10 m and was extensively planted with the exotic tree species <i>Acacia confusa</i> which has been widely used in Hong Kong during the past few decades because of its adaptability to poor soil conditions.</p> <p>It has a low to moderate potential value to become mature woodland if given sufficient time and protection from disturbances such as hillfires. As a result the landscape quality and value is considered to be medium.</p> <p>The species of plantation are moderate in rarity. The maturity is moderate.</p> | <p>Medium</p> |
| <p>LR5</p> <p>(Photo refer to Figure 11.11)</p> <p>(Location refer to Figure 11.4)</p> | <p>Shrubland</p>  | <p>As a stage in the natural succession towards young woodland, the habitat of shrubland within the Study Area always occurs adjacent to woodland, either on a higher elevation or in a more close vicinity to villages where human activities may impede its succession. It had similar plant composition to the surrounding woodland but with proportionally more common shrub species (e.g. <i>Litsea rotundifolia</i> and <i>Psychotria asiatica</i>), pioneer trees (e.g. <i>Ficus hispida</i>, <i>Pandanus tectorius</i> and <i>Rhus chinensis</i>) and woody climbers (e.g. <i>Tetracera asiatica</i> and <i>Zanthoxylum nitidum</i>), with an average height ranging from 2 m to 3 m. The understorey vegetation of this habitat includes herbs (e.g. <i>Liriope spicata</i> and <i>Torenia benthamiana</i>) and ferns (e.g. <i>Blechnum orientale</i>).</p> <p>It has low to moderate potential value to become mature shrubland and then young woodland if given sufficient time and protection from disturbance. As a result the landscape quality and value is considered to be medium.</p> <p>It has moderate diversity of plants.</p>  | <p>Medium</p> |



| ID   | Landscape Feature | Dominant Species  | Sensitivity |
|--|-------------------|---|-------------|
| LR6<br>(Photo refer to Figure 11.11)<br>(Location refer to Figure 11.4)  | Grassland         | <p>The upland area of Fu Shan and Sze Shan within the Study Area were dominated by grassland. Because of the bouldered steep terrain and grassy nature, this habitat is generally open and simple in structure and had an average plant height of 0.5 m to 1 m. Common herbs (e.g. <i>Digitaria sanguinalis</i>), shrubs (e.g. <i>Melastoma candidum</i>) and ferns (e.g. <i>Dicranopteris pedata</i>) grew extensively in this area. Most of the species are wind resistant and are well adapted to the relatively dry environment. Isolated trees such as <i>Phoenix hanceana</i>, <i>Phyllanthus emblica</i> and <i>Rhus</i> spp. were also spotted within the habitat.</p> <p>The potential value of grassland is subject to practice of management and level of disturbance (e.g. hill fires). As a result the landscape quality and value is considered to be medium.</p> <p>The plant species are moderate in rarity.</p>  | Medium      |
| LR10<br>(Photo refer to Figure 11.12)<br>(Location refer to Figure 11.4) | Agricultural Land | <p>A small area of agricultural land was identified within the Study Area. It was located at Hang Mei in the east. The agricultural land at Hang Mei was found to have been abandoned and the field was overgrown by shrubs (e.g. <i>Lantana camara</i>), grasses (e.g. <i>Bidens alba</i>) and climbers (e.g. <i>Mikania micrantha</i>). In the northern agricultural land, farming activities were observed during the baseline surveys. Plants cultivated in this area included vegetables such as Water Spinach <i>Ipomoea aquatica</i>, Egg-plant <i>Solanum melongena</i> and Hairy Gourd <i>Benincasa hispida</i> as well as a range of fruit trees such as <i>Averrhoa carambola</i>, <i>Citrus</i> sp., <i>Clausena lansium</i>, <i>Dimocarpus longan</i> and <i>Litchi chinensis</i>.</p> <p>The plant species are moderate in rarity.</p> <p>The potential value is highly depending on the management practice of land owners, e.g. wet agricultural land often has higher ecological value due to the comparatively high diversity of fauna it supports. As a result the landscape quality and value is considered to be medium.</p> | Medium      |
| LR8<br>(Photo refer to Figure 11.12)<br>(Location refer to Figure 11.4)  | Waterbody         | <p>Tai O Creek</p> <p>It is important habitat to fishes. Fishes inhabit the estuary of Tai O Creek.</p> <p>It is also an important habitat to mangroves. Mangroves occur in the tidal riparian zone of Tai O Creek. As a result the landscape quality and value is considered to be high.</p> <p>It is a local important component of landscape particularly susceptible to relatively small changes.</p>   | High        |



| ID   | Landscape Feature | Dominant Species   | Sensitivity |
|--|-------------------|--|-------------|
| LR11<br>(Photo refer to Figure 11.12)<br>(Location refer to Figure 11.4) | Village           | Village areas such as Wang Hang Tsuen, San Tsuen, and the east of Leung Uk Tsuen, etc.<br><br>The landscape quality and value is considered to be medium.  | Medium      |
| LR12<br>(Photo refer to Figure 11.12)<br>(Location refer to Figure 11.4) | Developed Area    | Lung Tin Estate at north to Tai O Road.<br><br>Plant species found in the open spaces were common.<br><br>It has high ability to accommodate changes. It is man-made structure and is readily re-creatable. As a result the landscape quality and value is considered to be low. | Low         |

11.6.8 Sensitivity of LCAs with relatively more important landscape character including woodland and hillside, waterbody (marine), mangrove / marsh / reedbed (i.e. LCA4, LCA6 and LCA7) are considered as “High”. Sensitivity of LCAs of village, waterbody (pond or river channel) and agricultural land (i.e. LCA5, LCA9 and LCA10) are considered as “Medium”. Other LCAs with relatively unimportant landscape character and the nature of which is largely tolerant to change, including institutional, transportation corridor and medium rise residential (i.e. LCA1, LCA3 and LCA8) are considered as “Low”. The sensitivity of each LCA is presented in **Table 11.5**.

**Table 11.5 : Description of Identified Landscape Character Area (LCA) of proposed Hang Mei SPS**

| ID   | Landscape Character Area | Description  | Sensitivity |
|--|--------------------------|--|-------------|
| LCA1<br>(Photo refer to Figure 11.12)<br>(Location refer to Figure 11.5) | Institutional            | Yim Tin Pok Temporary Playground and a covered service reservoir at Hang Mei.<br><br>Plant species found in the open spaces were common.<br><br>The landscape quality and value is considered to be low.<br><br>They are largely tolerant to change. | Low         |
| LCA3<br>(Photo refer to Figure 11.12)<br>(Location refer to Figure 11.5) | Transportation Corridor  | Tai O Road.<br><br>They have high ability to accommodate changes. They are readily re-creatable.<br><br>The landscape quality and value is considered to be low.   | Low         |



| ID   | Landscape Character Area   | Description  | Sensitivity |
|--|----------------------------|--|-------------|
| LCA4<br>(Photo refer to Figure 11.11)<br>(Location refer to Figure 11.5) | Woodland and Hillside      | <p>They are mainly woodland and hillside plantation area located around Hang Mei.</p> <p>It has low ability to accommodate changes. It would take at least 30 years for the woodland to be re-created.</p> <p>They have high potential value to become mature woodland if given sufficient time and protection from disturbances such as hillfires. As a result the landscape quality and value is considered to be high.</p> <p>They are regional important components of landscape particularly susceptible to relatively small changes.</p> | High        |
| LCA5<br>(Photo refer to Figure 11.12)<br>(Location refer to Figure 11.5) | Village                    | <p>Village areas such as Wang Hang Tsuen, San Tsuen, and the east of Leung Uk Tsuen, etc.</p> <p>The landscape quality and value is considered to be medium.</p>   | Medium      |
| LCA6<br>(Photo refer to Figure 11.12)<br>(Location refer to Figure 11.5) | Waterbody (Marine)         | <p>Tai O Creek.</p> <p>They are linked to adjacent mangrove and agricultural land. As a result the landscape quality and value is considered to be high.</p> <p>They are local important components of landscape particularly susceptible to relatively small changes.</p>   | High        |
| LCA7<br>(Photo refer to Figure 11.11)<br>(Location refer to Figure 11.5) | Mangrove / Marsh / Reedbed | <p>Mangrove / Marsh / Reedbed at north-east of Leung Uk Tsuen.</p> <p>They have low ability to accommodate changes. They will increase in size if given sufficient time and proper sediment and tidal conditions.</p> <p>The mangroves contribute significantly to the coastline landscape character, as a result the landscape quality and value is considered to be high.</p> <p>They are regional important components of landscape particularly susceptible to relatively small changes.</p>   | High        |
| LCA8<br>(Photo refer to Figure 11.12)<br>(Location refer to Figure 11.5) | Medium Rise Residential    | <p>Lung Tin Estate at north to Tai O Road.</p> <p>Plant species found in the open spaces were common.</p> <p>The landscape quality and value is considered to be low.</p> <p>It is largely tolerant to change.</p>   | Low         |



| ID  | Landscape Character Area             | Description  | Sensitivity |
|---|--------------------------------------|--|-------------|
| LCA9<br>(Photo refer to Figure 11.11)<br>(Location refer to Figure 11.5)  | Waterbody<br>(Pond or River Channel) | <p>Pond at west of Buddhist Fat Ho Memorial School and Pond at north of Tai O Creek.</p> <p>It has moderate ability to accommodate changes. It has moderate potential value in general if provided with sufficient time to allow more aquatic species to establish and protection from disturbance.</p> <p>The landscape quality and value is considered to be medium.</p>   | Medium      |
| LCA10<br>(Photo refer to Figure 11.12)<br>(Location refer to Figure 11.5) | Agricultural Land                    | <p>A small area of agricultural land was identified within the Study Area. It was located at Hang Mei in the east. The agricultural land at Hang Mei was found to have been abandoned and the field was overgrown by shrubs (e.g. Lantana camara), grasses (e.g. Bidens alba) and climbers (e.g. Mikania micrantha). In the northern agricultural land, farming activities were observed during the baseline surveys. Plants cultivated in this area included vegetables such as Water Spinach Ipomoea aquatica, Egg-plant Solanum melongena and Hairy Gourd Benincasa hispida as well as a range of fruit trees such as Averrhoa carambola, Citrus sp., Clausena lansium, Dimocarpus longan and Litchi chinensis.</p> <p>The plant species are moderate in rarity.</p> <p>The landscape quality and value is considered to be medium.</p> | Medium      |

### ***Proposed Fan Kwai Tong SPS***

- 11.6.9 Existing Landscape Resource (LR) and Landscape Character Area (LCA) are identified within the study boundary, which is within 500m from the proposed site of Fan Kwai Tong SPS. The locations of the LRs and LCAs are shown in **Figure 11.7** and **Figure 11.8** respectively. Photographic records of LRs and LCAs are shown in **Figure 11.10** to **Figure 11.13**.
- 11.6.10 The Ecological Baseline Survey conducted in May - October 2011 identified that no rare or protected plant species and no species of conservation interest was found within the study boundary of the proposed Fan Kwai Tong SPS. The Tree Survey as appended in **Appendix 11.1** identifies 3 nos. of trees at the proposed site of Fan Kwai Tong SPS.
- 11.6.11 Sensitivity of LRs with relatively more important landscape character including mangrove, marsh / reedbed and woodland (i.e. LR1, LR2 and LR4) are considered as "High". Sensitivity of LRs of pond, coastal area, waterbody, plantation and village (i.e. LR3, LR7, LR8, LR9 and LR11) are considered as "Medium". Sensitivity of LR of developed area (i.e. LR12) is considered as "Low". The description and summary of sensitivity of each LRs is presented in **Table 11.6**.





**Table 11.6 : Description of Identified Landscape Resource (LR) of proposed Fan Kwai Tong SPS**

| ID  | Landscape Feature | Dominant Species  | Sensitivity |
|---|-------------------|---|-------------|
| LR1<br>(Photo refer to Figure 11.13)<br>(Location refer to Figure 11.7) | Mangrove          | <p>Mangroves were found in the stands along the pond bunds of the designated MRA and a large area to the north of Leung Uk Tsuen. A total of 20 plant species were recorded. The front part of the mangrove stands was dominated by two pioneer mangrove species <i>Kandelia obovata</i> and <i>Avicennia marina</i>, reaching a height of 2-4m.</p> <p>Although they are common species, they have low ability to accommodate changes. They will increase in size if given sufficient time and proper sediment and tidal conditions.</p> <p>The mangroves contribute significantly to the coastline landscape character, as a result the landscape quality and value is considered to be high.</p> <p>They are regional important components of landscape particularly susceptible to relatively small changes.</p>  | High        |
| LR2<br>(Photo refer to Figure 11.13)<br>(Location refer to Figure 11.7) | Marsh / Reedbed   | <p>A patch of marsh with frequent shallow water and featuring reeds, wetland ferns and sedges was identified within the Study Area, to the north of Leung Uk Tsuen. The marsh to the north of Leung Uk Tsuen was dominated by Common Reedgrass <i>Phragmites australis</i> and was therefore a continuous reedbed. It is physically and hydrologically separated from the MRA by the elevated concrete roadway leading to Leung Uk Tsuen and Nam Chung Tsuen, but still subject to the tidal influence through Tai O Creek.</p> <p>They are mature. They have evolved since the cessation of salt-extraction activity, &gt;20 years. They have the potential ability to support a variety of uncommon species (especially birds).</p> <p>As a result the landscape quality and value is considered to be high.</p> <p>They are regional important components of landscape particularly susceptible to relatively small changes.</p> | High        |
| LR3<br>(Photo refer to Figure 11.13)<br>(Location refer to Figure 11.7) | Pond              | <p>Both of the MRA and the area west of Buddhist Fat Ho Memorial School are used to be salt pans and now abandoned and inundated even during low tide. Mangroves plants dominated by <i>Kandelia obovata</i> colonized the edges of the bunds which is a common species.</p> <p>It would change into marsh or mangrove habitat given sufficient time and left the area without active management. As a result the landscape quality and value is considered to be high.</p> <p>It has moderate ability to accommodate changes. It has moderate potential value in general if provided with sufficient time to allow more aquatic species to establish and protection from disturbance.</p>  | Medium      |



| ID  | Landscape Feature | Dominant Species   | Sensitivity |
|---|-------------------|--|-------------|
| LR4<br><br>(Photo refer to <b>Figure 11.13</b> )<br><br>(Location refer to <b>Figure 11.7</b> ) | Woodland          | <p>Woodland was found in foothills and ravines of Tsim Fung Shan, behind villages of Fan Kwai Tong Tsuen, Nam Chung Tsuen and Leung Uk Tsuen. This habitat had a semi-closed to closed canopy, which ranged from 8m to 12 m in height depending on the local topography and the canopy species. Common tree species such as <i>Celtis sinensis</i>, <i>Mallotus paniculatus</i> and <i>Pinus elliottii</i> were found on this canopy. Judging from the height and species composition of the canopy, woodland within the Study Area is estimated to have an age of more than 20 years. The mid-storey of this habitat was occupied by shrubs (e.g. <i>Lantana camara</i>, <i>Litsea rotundifolia</i>, <i>Ligustrum sinense</i> and <i>Psychotria asiatica</i>) and small to medium sized trees (e.g. <i>Aporosa dioica</i>, <i>Sterculia lanceolata</i> and <i>Phyllanthus emblica</i>), and understory occupied by low lying herbs including <i>Centella asiatica</i> and <i>Torenia benthamiana</i> of low density due to the shaded condition. Besides, climbers such as <i>Ampelopsis cantoniensis</i>, <i>Celastrus hindsii</i> and <i>Zanthoxylum nitidum</i> and ferns <i>Paederia scandens</i> were commonly found to be intermingled with the branches of trees and shrubs.</p> <p>It has low ability to accommodate changes. It would take at least 30 years for the woodland to be re-created.</p> <p>It has a high potential value to become mature woodland if given sufficient time and protection from disturbances such as hillfires. As a result the landscape quality and value is considered to be high.</p> <p>It is a regional important component of landscape particularly susceptible to relatively small changes.</p> | High        |
| LR9<br><br>(Photo refer to <b>Figure 11.13</b> )<br><br>(Location refer to <b>Figure 11.7</b> ) | Plantation        | <p>Plantation was found within the Study Area on the hill slopes behind San Tsuen. The plantation woodland along the hillside behind San Tsuen had a semi-closed canopy at a height of approximately 10 m and was extensively planted with the exotic tree species <i>Acacia confusa</i> which has been widely used in Hong Kong during the past few decades because of its adaptability to poor soil conditions.</p> <p>It has low to moderate potential value to become mature woodland if given sufficient time and protection from disturbances such as hillfires. As a result the landscape quality and value is considered to be medium.</p> <p>The species of plantation are moderate in rarity. The maturity is moderate.</p>  | Medium      |



| ID   | Landscape Feature | Dominant Species   | Sensitivity |
|--|-------------------|--|-------------|
| LR7<br>(Photo refer to Figure 11.13)<br>(Location refer to Figure 11.7)  | Coastal Area      | <p>The coastal area at Fan Kwai Tong comprised both rocky shore (hard bottom) and sandy shore (soft bottom). Since it was in close proximity to village houses, this coastline received human disturbances to some extent, with rubbish spotted on the beach.</p> <p>It is common over the assessment area.</p> <p>It has moderate ability to accommodate changes.</p> <p>Although it is common over the assessment area, it contributes to the landscape character of coastal area, the landscape quality and value is considered to be medium.</p> | Medium      |
| LR8<br>(Photo refer to Figure 11.13)<br>(Location refer to Figure 11.7)  | Waterbody         | <p>Seawater body and breakwater at the west of Tai O.</p> <p>It has moderate ability to accommodate changes. It has moderate potential value in general if provided with sufficient time to allow more aquatic species to establish and protection from disturbance.</p> <p>The landscape quality and value is considered to be medium.</p>  | Medium      |
| LR11<br>(Photo refer to Figure 11.13)<br>(Location refer to Figure 11.7) | Village           | <p>Village areas such as Nam Chung Tsuen and Leung Uk Tsuen.</p> <p>The species of plantation are moderate in rarity. The maturity is moderate.</p> <p>The landscape quality and value is considered to be medium.</p>   | Medium      |
| LR12<br>(Photo refer to Figure 11.13)<br>(Location refer to Figure 11.7) | Developed Area    | <p>Yim Tin Pok Temporary Playground.</p> <p>Plant species found in the open spaces were common.</p> <p>It has high ability to accommodate changes. It is man-made structure and is readily re-creatable. As a result the landscape quality and value is considered to be low.</p>  | Low         |

11.6.12 Sensitivity of LCAs with relatively more important landscape character including woodland and hillside, waterbody, mangrove / marsh / reedbed (i.e. LCA4, LCA6 and LCA7) are considered as “High”. Sensitivity of LCAs of village and waterbody (pond or river channel) (i.e. LCA5 and LCA9) are considered as “Medium”. Other LCAs with relatively unimportant landscape character and the nature of which is largely tolerant to change, including institutional and transportation corridor (i.e. LCA1 and LCA3) are considered as “Low”. The sensitivity of each LCA is presented in **Table 11.7**.



**Table 11.7 : Description of Identified Landscape Character Area (LCA) of proposed Fan Kwai Tong SPS**

| ID   | Landscape Character Area | Description  | Sensitivity |
|--|--------------------------|--|-------------|
| LCA1<br>(Photo refer to Figure 11.13)<br>(Location refer to Figure 11.8) | Institutional            | Yim Tin Pok Temporary Playground.<br><br>Plant species found in the open spaces were common.<br><br>The landscape quality and value is considered to be low.<br><br>It is largely tolerant to change.  | Low         |
| LCA3<br>(Photo refer to Figure 11.13)<br>(Location refer to Figure 11.8) | Transportation Corridor  | Paved vehicular access road and footpath to Leung Uk Tsuen, Nam Chung Tsuen and Fan Kwai Tong.<br><br>They have high ability to accommodate changes. They are readily re-creatable. As a result the landscape quality and value is considered to be low.   | Low         |
| LCA4<br>(Photo refer to Figure 11.13)<br>(Location refer to Figure 11.8) | Woodland and Hillside    | They are mainly woodland and hillside plantation area located at the south of Fan Kwai Tong and Nam Chung Tsuen.<br><br>They have low ability to accommodate changes. They would take at least 30 years for the woodland to be re-created.<br><br>They have high potential value to become mature woodland if given sufficient time and protection from disturbances such as hillfires. As a result the landscape quality and value is considered to be high.<br><br>They are regional important components of landscape particularly susceptible to relatively small changes. | High        |
| LCA5<br>(Photo refer to Figure 11.13)<br>(Location refer to Figure 11.8) | Village                  | Village areas such as Nam Chung Tsuen and Leung Uk Tsuen.<br><br>The species of plantation are moderate in rarity. The maturity is moderate.<br><br>The landscape quality and value is considered to be medium.  | Medium      |
| LCA6<br>(Photo refer to Figure 11.13)<br>(Location refer to Figure 11.8) | Waterbody                | Seawater body.<br><br>It has low ability to accommodate changes.<br><br>The landscape quality and value is considered to be high.<br><br>They are local important components of landscape particularly susceptible to relatively small changes.  | High        |



| ID   | Landscape Character Area          | Description   | Sensitivity |
|--|-----------------------------------|---|-------------|
| LCA7<br>(Photo refer to Figure 11.13)<br>(Location refer to Figure 11.8) | Mangrove / Marsh / Reedbed        | <p>Mangrove / Marsh / Reedbed at north to Leung Uk Tsuen.</p> <p>They have low ability to accommodate changes. They will increase in size if given sufficient time and proper sediment and tidal conditions.</p> <p>The mangroves contribute significantly to the coastline landscape character, as a result the landscape quality and value is considered to be high.</p> <p>They are regional important components of landscape particularly susceptible to relatively small changes.</p> | High        |
| LCA9<br>(Photo refer to Figure 11.13)<br>(Location refer to Figure 11.8) | Waterbody (Pond or River Channel) | <p>Pond at southern side of Tai O Road.</p> <p>It has moderate ability to accommodate changes. It has moderate potential value in general if provided with sufficient time to allow more aquatic species to establish and protection from disturbance.</p> <p>The landscape quality and value is considered to be medium.</p>   | Medium      |

### ***Proposed Sewers Works***

- 11.6.13 The locations of proposed sewers works are along the existing carriageway, footpaths and paved tracks. The photographic records of the locations of proposed sewers works are provided in **Appendix 11.3**. No trees will be affected by the proposed sewers works.
- 11.6.14 The sensitivity of each LR and LCA is presented in **Table 11.8** and **Table 11.9** respectively.

**Table 11.8 : Description of Identified Landscape Resource (LR) of proposed Sewers Works**

| ID                                    | Landscape Feature | Dominant Species  | Sensitivity |
|---------------------------------------|-------------------|---|-------------|
| LR11<br>(Photo refer to Figure 11.12) | Village           | <p>Village areas such as Wang Hang Tsuen, San Tsuen, Nam Chung Tsuen and Leung Uk Tsuen, etc.</p> <p>The species of plantation are moderate in rarity. The maturity is moderate.</p> <p>The landscape quality and value is considered to be medium.</p> | Medium      |



**Table 11.9 : Description of Identified Landscape Character Area (LCA) of proposed Sewers Works**

| ID                                    | Landscape Character Area | Description  | Sensitivity |
|---------------------------------------|--------------------------|--|-------------|
| LCA5<br>(Photo refer to Figure 11.13) | Village                  | Village areas such as Wang Hang Tsuen, San Tsuen, Nam Chung Tsuen and Leung Uk Tsuen, etc.<br><br>The species of plantation are moderate in rarity. The maturity is moderate.<br><br>The landscape quality and value is considered to be medium. | Medium      |

## Visual Baseline

### *Proposed Expansion and Upgrading of Tai O STW*

11.6.15 Tai O STW is surrounded by the sea and hills. There is only one access footpath leading to the project site. It is not visible at most of the points in the vicinity of the project site. A view point from the hiking trail up the hill to the south of Tai O STW is shown in **Appendix 11.5**. It indicates that Tai O STW is not visible at this view point. VSRs are identified within the visual envelope as presented in **Figure 11.3** with photographic records as presented in **Figure 11.14**. Descriptions of the identified VSRs are as below:

#### ***VSR STW-1 - Sea opposite to Tai O STW***

11.6.16 These VSRs comprise sea travellers travelling across the sea opposite to Tai O STW and those of Chinese White Dolphin Tour. Low marine traffic is observed and hence the estimated number of receiver population is few. Alternative sea view and views on the hillside of Tai O are also available. These VSRs are easily distracted by the sea view which is considered of high amenity value, the sensitivity of these VSRs is considered to be Low.

#### ***VSR STW-2 - Footpath along the Coast***

11.6.17 These VSRs comprise road users of the footpath to Tai O STW. Extending from Kat Hing Back Street, the footpath terminates at the existing Tai O STW. The footpath is mainly used by the operators and workers of the Tai O STW, and is occasionally used by hikers. Since the Tai O STW is a self-operating system, the number of road users is very small. These VSRs are also easily distracted by the sea view which is considered of high amenity value, the sensitivity of these VSRs is considered to be Low.





**Table 11.10 : Description of Identified Visual Sensitive Receivers (VSR) of proposed Tai O STW**

| VSR       | Value and quality of existing views   | Availability and amenity of alternative views | Type and estimated number of receiver population   | Duration or frequency of view  | Degree of visibility | Sensitivity         |
|-----------|---|---|--|--|----------------------|---------------------|
|           |   |   |  |  |                      | (Low, Medium, High) |
| VSR STW-1 | High quality of view on the existing Tai O STW with insubstantial building height       | High amenity sea view and tree view available | Sea travellers travelling across the sea opposite to Tai O STW and those of Chinese White Dolphin Tour / Few | Short term views that change as the VSR moves around the area by ships | High                 | Low                 |
| VSR STW-2 | Medium quality of view on the existing Tai O STW with little visual mitigation measures | High amenity sea view available               | Road users of the footpath to Tai O STW / Very Few   | Medium term views as the VSR move along the path                       | High                 | Low                 |

***Proposed Hang Mei SPS***

11.6.18 The proposed site of Hang Mei SPS is located at the entrance of Wang Hang Village from Tai O Road. The location is remote and there are not many VSRs in the vicinity. A view point at the sitting out area on Tai O Road to the south of the site is shown in **Appendix 11.5**. It indicates that the proposed site of Hang Mei SPS is not visible at this view point. Three VSRs are identified within the visual envelop as presented in **Figure 11.6** with photographic records as presented in **Figure 11.14**. Descriptions of the identified VSRs are as below:

***VSR HM-1 - Tai O Road***

11.6.19 Travellers travelling along Tai O Road will be able to see the proposed Hang Mei SPS. The duration of view is considered very short and the proposed site of Hang Mei SPS is lower than Tai O Road which could be screened off by trees along the roadside. The sensitivity of these VSRs is considered to be Low.

***VSR HM-2 - Bus Stop at Tai O Road***

11.6.20 These VSRs refer to the passengers at the bus-stop located on the opposite side of Tai O Road. Low degree of visibility of the proposed Hang Mei SPS is anticipated since the proposed site of Hang Mei SPS is lower than Tai O Road and is screened off by trees along the roadside. Alternative views on other features like trees and mountains are available. The sensitivity of these VSRs is considered to be Low.

***VSR HM-3 - Wang Hang Village***

11.6.21 These VSRs comprise the residents of Wang Hang Village which is located at the north of the proposed site of Hang Mei SPS. The population of the village is small, while only a few residents living adjacent would be suffered from long term views. The proposed site of Hang Mei SPS could be screened by the heavily planted trees. Alternative views on other features like trees, mountains and Tai O Creek are available. The sensitivity of these VSRs is considered to be Medium.



**Table 11.11 : Description of Identified Visual Sensitive Receivers (VSR) of proposed Hang Mei SPS**

| VSR      | Value and quality of existing views               | Availability and amenity of alternative views                      | Type and estimated number of receiver population                            | Duration or frequency of view  | Degree of visibility | Sensitivity         |
|----------|---|--|---|--|----------------------|---------------------|
|          |   |  |   |  |                      | (Low, Medium, High) |
| VSR HM-1 | Medium quality of view with heavily planted trees | Alternative views on the adjacent trees and mountains              | Travellers travelling along Tai O Road / Many                               | Very short term views that change as the VSR moves around along the road | Medium - Low         | Low                 |
| VSR HM-2 | Medium quality of view with heavily planted trees | Alternative views on the adjacent trees and mountains              | Passengers at the bus-stop located on the opposite side of Tai O Road / Few | Medium term views  | Low                  | Low                 |
| VSR HM-3 | Medium quality of view with heavily planted trees | Alternative views on the adjacent trees, mountains and Tai O Creek | Residents of Wang Hang Village / Few  | Long term views  | Low                  | Medium              |

***Proposed Fan Kwai Tong SPS***

11.6.22 The proposed site of Fan Kwai Tong SPS is located near Nam Chung Tsuen. The visibility is low as the existing site is abandoned and covered with weeds and trees. Three VSRs are identified within the visual envelop as presented in **Figure 11.9** with photographic records as presented in **Figure 11.14** to **11.15**. Descriptions of the identified VSRs are as below:

***VSR FKT-1 - Western Nam Chung Tsuen***

11.6.23 These VSRs refer to the residents of Nam Chung Tsuen located to the southwest of the proposed site of Fan Kwai Tong SPS. The local residents usually access through the alternative path along seawall and only a few residents living adjacent would be suffered from long term views. The degree of visibility on the proposed Fan Kwai Tong SPS to these VSRs is high but alternative sea views and tree views are available. The sensitivity of these VSRs is considered to be Medium.

***VSR FKT-2 - Eastern Nam Chung Tsuen***

11.6.24 These VSRs refer to the residents of Nam Chung Tsuen located to the east of the proposed site of Fan Kwai Tong SPS and the transient passers to Fan Kwai Tong. The proposed site of Fan Kwai Tong SPS is screened off by the heavily planted trees. These VSRs are also easily distracted by the sea view which is considered of high amenity value. The sensitivity of these VSRs is considered to be Low.

***VSR FKT-3 - Earth Shrine***

11.6.25 These VSRs comprise the worshipers who pay visits to the earth shrine located to the west of the proposed site of Fan Kwai Tong SPS and the transient passers to Fan Kwai Tong. The shrine is probably worshipped by the local villagers and the number of worshiper is expected to be small. The degree of visibility on the proposed Fan Kwai Tong SPS to these VSRs is high but alternative sea views and tree views are available. The sensitivity of these VSRs is considered to be Medium.



**Table 11.12 : Description of Identified Visual Sensitive Receivers (VSR) of proposed Fan Kwai Tong SPS**

| VSR       | Value and quality of existing views               | Availability and amenity of alternative views        | Type and estimated number of receiver population   | Duration or frequency of view  | Degree of visibility | Sensitivity         |
|-----------|---|--|--|--|----------------------|---------------------|
|           |   |  |  |  |                      | (Low, Medium, High) |
| VSR FKT-1 | Medium quality of view with heavily planted trees | High alternative views on the adjacent trees and sea | Residents of Nam Chung Tsuen located to the southwest of the proposed site of Fan Kwai Tong SPS / Few  | Long term views  | High                 | Medium              |
| VSR FKT-2 | Medium quality of view with heavily planted trees | High alternative views on the adjacent trees and sea | Residents of Nam Chung Tsuen located to the east of the proposed site of Fan Kwai Tong SPS and the transient passers to Fan Kwai Tong / Medium                   | Short term views for transient passers; long term views for residents of Nam Chung Tsuen | Low                  | Low                 |
| VSR FKT-3 | Medium quality of view with heavily planted trees | High alternative views on the adjacent trees and sea | Worshippers who pay visits to the earth shrine located to the west of the proposed site of Fan Kwai Tong SPS and the transient passers to Fan Kwai Tong / Medium | Short term views   | High                 | Medium              |

## 11.7 Landscape and Visual Impact Assessment

### Landscape Impacts

#### *Proposed Expansion and Upgrading of Tai O STW*

11.7.1 The potential sources of landscape impact in the construction phase include:

- Site formation by reclamation;
- Construction of submarine outfall;
- Demolition of existing treatment units;
- Excavation and construction of the treatment units and plant rooms;
- Temporary stockpiling of excavated materials and construction materials; and
- Temporary storage of construction plants and equipment.

11.7.2 The potential sources of landscape impact during the operation phase would be related to the above ground structures within the proposed Tai O STW.

11.7.3 The proposed expansion and upgrading of the Tai O STW will involve 0.26ha site formation by reclamation, giving a total area of 0.34ha for the proposed Tai O STW. There would be impact on the waterbody (LR8 and LCA6), coastal area (LR7 and LCA2) and the existing Tai O STW site (LCA1) due to the construction works as listed out in **Section 11.7.1** within the construction period (approximately 4.5 years). As the proposed site of proposed Tai O STW is small when compared with the remaining waterbody and coastal area, the magnitude of change on topography and landform as a landscape resource for LR8 and LCA6, LR7 and LCA2 during operation is considered to be “small”. During construction stage of the proposed Tai



O STW, construction works including dredging for submarine outfall will be deployed, leading to intermediate changes to the affected landscape resources and landscape character areas (except LCA1 with the landscape character areas of existing Tai O STW, which the magnitude of change is considered as “small” during construction phase and “negligible” during operation phase).

- 11.7.4 The proposed STW works would have no direct impact on all other landscape resources and landscape character areas located outside of the STW site, on the consideration that the construction works will be confined within the boundary of STW. Therefore, the magnitudes of change for the remaining landscape resources during construction and operation are considered to be “Negligible”. The assessment on magnitude of change and impact significance for landscape resources and landscape character areas in the construction and operation phases of proposed Tai O STW is presented in **Table 11.13**.

**Table 11.13 : Assessment on Magnitude of Change and Impact Significance for Landscape Resources and Landscape Character Areas in the Construction and Operation Phases of proposed Tai O STW**

| Landscape Resources / Landscape Character Areas |                 | Sensitivity (Low, Medium or High) | Magnitude of Change before Mitigation (Negligible, Small, Intermediate or Large) |  | Impact Significance Threshold before Mitigation (Insubstantial, Slight, Moderate or Substantial) |   |
|---|-----------------|-----------------------------------|--|--|--|---|
|   |                 |                                   | Construction   | Operation  | Construction   | Operation   |
| LR1   | Mangrove        | High                              | <b>Negligible</b><br>There is virtually no change in the area.                   | <b>Negligible</b><br>There is virtually no change in the area. | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.        | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality. |
| LR2   | Marsh / Reedbed | High                              | <b>Negligible</b><br>There is virtually no change in the area.                   | <b>Negligible</b><br>There is virtually no change in the area. | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.        | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality. |
| LR3   | Pond            | High                              | <b>Negligible</b><br>There is virtually no change in the area.                   | <b>Negligible</b><br>There is virtually no change in the area. | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.        | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality. |
| LR4   | Woodland        | High                              | <b>Negligible</b><br>There is virtually no change in the area.                   | <b>Negligible</b><br>There is virtually no change in the area. | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.        | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality. |



| Landscape Resources /<br>Landscape Character Areas |              | Sensitivity<br>(Low,<br>Medium or<br>High) | Magnitude of Change before<br>Mitigation (Negligible, Small,<br>Intermediate or Large) |  | Impact Significance Threshold before<br>Mitigation (Insubstantial, Slight,<br>Moderate or Substantial)   |  |
|--|--------------|--|--|--|--|--|
|  |              |  | Construction   | Operation  | Construction   | Operation  |
| LR5  | Shrubland    | Medium                                     | <b>Negligible</b><br>There is virtually no change in the area.                         | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LR6  | Grassland    | Medium                                     | <b>Negligible</b><br>There is virtually no change in the area.                         | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LR7  | Coastal Area | High                                       | <b>Intermediate</b><br>There is moderate change in a localized area.                   | <b>Small</b><br>There is virtually imperceptible change or temporary change. | <b>Moderate</b><br>There is adverse or beneficial impact where the proposal would cause noticeable deterioration or improvement in existing landscape quality. | <b>Slight</b><br>There is adverse or beneficial impact where the proposal would cause a barely perceptible deterioration or improvement in existing landscape quality. |
| LR8  | Waterbody    | Medium                                     | <b>Intermediate</b><br>There is moderate change in a localized area.                   | <b>Small</b><br>There is virtually imperceptible change or temporary change. | <b>Moderate</b><br>There is adverse or beneficial impact where the proposal would cause noticeable deterioration or improvement in existing landscape quality. | <b>Slight</b><br>There is adverse or beneficial impact where the proposal would cause a barely perceptible deterioration or improvement in existing landscape quality. |
| LR11   | Village      | High                                       | <b>Negligible</b><br>There is virtually no change in the area.                         | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |



| Landscape Resources /<br>Landscape Character Areas |                         | Sensitivity<br>(Low,<br>Medium or<br>High) | Magnitude of Change before<br>Mitigation (Negligible, Small,<br>Intermediate or Large) |  | Impact Significance Threshold before<br>Mitigation (Insubstantial, Slight,<br>Moderate or Substantial)   |  |
|--|-------------------------|--|--|--|--|--|
|  |                         |  | Construction   | Operation  | Construction   | Operation  |
| LR12   | Developed Area          | Low  | <b>Negligible</b><br>There is virtually no change in the area.                         | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LCA1   | Institutional           | Low  | <b>Small</b><br>There is virtually imperceptible change or temporary change.           | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LCA2   | Coastal Area with Slope | High                                       | <b>Intermediate</b><br>There is moderate change in a localized area.                   | <b>Small</b><br>There is virtually imperceptible change or temporary change. | <b>Moderate</b><br>There is adverse or beneficial impact where the proposal would cause noticeable deterioration or improvement in existing landscape quality. | <b>Slight</b><br>There is adverse or beneficial impact where the proposal would cause a barely perceptible deterioration or improvement in existing landscape quality. |
| LCA3   | Transportation Corridor | Low  | <b>Negligible</b><br>There is virtually no change in the area.                         | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LCA4   | Woodland and Hillside   | High                                       | <b>Negligible</b><br>There is virtually no change in the area.                         | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LCA5   | Village                 | High                                       | <b>Negligible</b><br>There is virtually no change in the area.                         | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |





| Landscape Resources /<br>Landscape Character Areas |                                   | Sensitivity<br>(Low,<br>Medium or<br>High) | Magnitude of Change before<br>Mitigation (Negligible, Small,<br>Intermediate or Large) |  | Impact Significance Threshold before<br>Mitigation (Insubstantial, Slight,<br>Moderate or Substantial)   |  |
|--|-----------------------------------|--|--|--|--|--|
|  |                                   |  | Construction   | Operation  | Construction   | Operation  |
| LCA6   | Waterbody                         | Medium                                     | <b>Intermediate</b><br>There is moderate change in a localized area.                   | <b>Small</b><br>There is virtually imperceptible change or temporary change. | <b>Moderate</b><br>There is adverse or beneficial impact where the proposal would cause noticeable deterioration or improvement in existing landscape quality. | <b>Slight</b><br>There is adverse or beneficial impact where the proposal would cause a barely perceptible deterioration or improvement in existing landscape quality. |
| LCA7   | Mangrove / Marsh / Reedbed        | High                                       | <b>Negligible</b><br>There is virtually no change in the area.                         | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LCA9   | Waterbody (Pond or River Channel) | Medium                                     | <b>Negligible</b><br>There is virtually no change in the area.                         | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |

### Proposed Hang Mei SPS and Fan Kwai Tong SPS

11.7.5 The potential sources of landscape impacts in the construction phase for both proposed SPSs include:

- Removal of existing vegetation and trees falling/transplanting;
- Construction of site access;
- Excavation and construction of the sewage pumping station;
- Temporary stockpiling of excavated materials and construction materials; and
- Temporary storage of construction plants and equipment.

11.7.6 The potential sources of landscape impacts during the operation phase would be related to the above ground structures of the proposed SPS.

11.7.7 The proposed site of Hang Mei SPS is located at the entrance of Wang Hang Village from Tai O Road. The proposed site is considered as Woodland and Hillside LCA (LCA4). There would be impact on the vegetation within the proposed Hang Mei SPS due to the construction works. However, giving the extent of proposed site of Hang Mei SPS would be small when compare with the remaining Woodland and Hillside LCA, the magnitude of change on topography and landform as a landscape



resource for LR4 and LCA4 during construction and operation of the proposed Hang Mei SPS is considered to be “Small”. 418 numbers of trees were surveyed in Tai O. Only 2 numbers of trees will be affected in the proposed site of Hang Mei SPS.

11.7.8 The proposed site of Fan Kwai Tong SPS is considered as Village LCA (LCA5) where the existing site is abandoned and covered with weeds and trees. There would be impacts on the vegetation within the proposed Fan Kwai Tong SPS due to the construction works. The conditions of trees to be affected are fair. The magnitude of change on topography and landform as a landscape resource for LCA5 during construction and operation of the proposed Fan Kwai Tong SPS is considered to be “Small”. 418 numbers of trees were surveyed in Tai O. Only 3 numbers of trees will be affected in the proposed site of Fan Kwai Tong SPS.

11.7.9 The proposed STW works would have no direct impact on all other landscape resources and landscape character areas located outside of the SPS sites. Therefore, the magnitude of change for other landscape resources and landscape character area outside the proposed SPS sites is considered to be “Negligible”. The assessment on magnitude of change and impact significance for landscape resources and landscape character areas in the construction and operation phases of proposed Hang Mei SPS and proposed Fan Kwai Tong SPS are presented in **Table 11.14** and **Table 11.15** respectively.

**Table 11.14 : Assessment on Magnitude of Change and Impact Significance for Landscape Resources and Landscape Character Areas in the Construction and Operation Phases of proposed Hang Mei SPS**

| Landscape Resources / Landscape Character Areas |                 | Sensitivity (Low, Medium or High) | Magnitude of Change before Mitigation (Negligible, Small, Intermediate or Large) |  | Impact Significance Threshold before Mitigation (Insubstantial, Slight, Moderate or Substantial) |   |
|---|-----------------|-----------------------------------|--|--|--|---|
|   |                 |                                   | Construction   | Operation  | Construction   | Operation   |
| LR1   | Mangrove        | High                              | <b>Negligible</b><br>There is virtually no change in the area.                   | <b>Negligible</b><br>There is virtually no change in the area. | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.        | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality. |
| LR2   | Marsh / Reedbed | High                              | <b>Negligible</b><br>There is virtually no change in the area.                   | <b>Negligible</b><br>There is virtually no change in the area. | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.        | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality. |
| LR3   | Pond            | High                              | <b>Negligible</b><br>There is virtually no change in the area.                   | <b>Negligible</b><br>There is virtually no change in the area. | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.        | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality. |



| Landscape Resources /<br>Landscape Character Areas |                   | Sensitivity<br>(Low,<br>Medium or<br>High) | Magnitude of Change<br>before Mitigation<br>(Negligible, Small,<br>Intermediate or Large) |  | Impact Significance Threshold before<br>Mitigation (Insubstantial, Slight,<br>Moderate or Substantial)   |  |
|--|-------------------|--|---|--|--|--|
|  |                   |  | Construction  | Operation  | Construction   | Operation  |
| LR4  | Woodland          | High                                       | <b>Small</b><br>There is virtually imperceptible change or temporary change.              | <b>Small</b><br>There is virtually imperceptible change or temporary change. | <b>Slight</b><br>There is adverse or beneficial impact where the proposal would cause a barely perceptible deterioration or improvement in existing landscape quality. | <b>Slight</b><br>There is adverse or beneficial impact where the proposal would cause a barely perceptible deterioration or improvement in existing landscape quality. |
| LR9  | Plantation        | Medium                                     | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LR5  | Shrubland         | Medium                                     | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LR6  | Grassland         | Medium                                     | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LR10   | Agricultural Land | Medium                                     | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LR8  | Waterbody         | High                                       | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |



| Landscape Resources /<br>Landscape Character Areas |                         | Sensitivity<br>(Low,<br>Medium or<br>High) | Magnitude of Change<br>before Mitigation<br>(Negligible, Small,<br>Intermediate or Large) |  | Impact Significance Threshold before<br>Mitigation (Insubstantial, Slight,<br>Moderate or Substantial)   |  |
|--|-------------------------|--|---|--|--|--|
|  |                         |  | Construction  | Operation  | Construction   | Operation  |
| LR11   | Village                 | Medium                                     | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LR12   | Developed Area          | Low  | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LCA1   | Institutional           | Low  | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LCA3   | Transportation Corridor | Low  | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LCA4   | Woodland and Hillside   | High                                       | <b>Small</b><br>There is virtually imperceptible change or temporary change.              | <b>Small</b><br>There is virtually imperceptible change or temporary change. | <b>Slight</b><br>There is adverse or beneficial impact where the proposal would cause a barely perceptible deterioration or improvement in existing landscape quality. | <b>Slight</b><br>There is adverse or beneficial impact where the proposal would cause a barely perceptible deterioration or improvement in existing landscape quality. |
| LCA5   | Village                 | Medium                                     | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |



| Landscape Resources /<br>Landscape Character Areas |                                      | Sensitivity<br>(Low,<br>Medium or<br>High) | Magnitude of Change<br>before Mitigation<br>(Negligible, Small,<br>Intermediate or Large) |   | Impact Significance Threshold before<br>Mitigation (Insubstantial, Slight,<br>Moderate or Substantial) |   |
|--|--------------------------------------|--|---|---|--|---|
|  |                                      |  | Construction  | Operation   | Construction   | Operation   |
| LCA6   | Waterbody                            | High                                       | <b>Negligible</b><br>There is<br>virtually no<br>change in the<br>area.                   | <b>Negligible</b><br>There is<br>virtually no<br>change in<br>the area. | <b>Insubstantial</b><br>There is no<br>discernible change<br>in the existing<br>landscape quality.     | <b>Insubstantial</b><br>There is no<br>discernible<br>change in the<br>existing<br>landscape quality. |
| LCA7   | Mangrove / Marsh /<br>Reedbed        | High                                       | <b>Negligible</b><br>There is<br>virtually no<br>change in the<br>area.                   | <b>Negligible</b><br>There is<br>virtually no<br>change in<br>the area. | <b>Insubstantial</b><br>There is no<br>discernible change<br>in the existing<br>landscape quality.     | <b>Insubstantial</b><br>There is no<br>discernible<br>change in the<br>existing<br>landscape quality. |
| LCA8   | Medium Rise<br>Residential           | Low  | <b>Negligible</b><br>There is<br>virtually no<br>change in the<br>area.                   | <b>Negligible</b><br>There is<br>virtually no<br>change in<br>the area. | <b>Insubstantial</b><br>There is no<br>discernible change<br>in the existing<br>landscape quality.     | <b>Insubstantial</b><br>There is no<br>discernible<br>change in the<br>existing<br>landscape quality. |
| LCA9   | Waterbody (Pond<br>or River Channel) | Medium                                     | <b>Negligible</b><br>There is<br>virtually no<br>change in the<br>area.                   | <b>Negligible</b><br>There is<br>virtually no<br>change in<br>the area. | <b>Insubstantial</b><br>There is no<br>discernible change<br>in the existing<br>landscape quality.     | <b>Insubstantial</b><br>There is no<br>discernible<br>change in the<br>existing<br>landscape quality. |
| LCA10  | Agricultural Land                    | Medium                                     | <b>Negligible</b><br>There is<br>virtually no<br>change in the<br>area.                   | <b>Negligible</b><br>There is<br>virtually no<br>change in<br>the area. | <b>Insubstantial</b><br>There is no<br>discernible change<br>in the existing<br>landscape quality.     | <b>Insubstantial</b><br>There is no<br>discernible<br>change in the<br>existing<br>landscape quality. |



**Table 11.15 : Assessment on Magnitude of Change and Impact Significance for Landscape Resources and Landscape Character Areas in the Construction and Operation Phases of proposed Fan Kwai Tong SPS**

| Landscape Resources / Landscape Character Areas |                 | Sensitivity (Low, Medium or High) | Magnitude of Change before Mitigation (Negligible, Small, Intermediate or Large) |  | Impact Significance Threshold before Mitigation (Insubstantial, Slight, Moderate or Substantial) |   |
|---|-----------------|-----------------------------------|--|--|--|---|
|   |                 |                                   | Construction   | Operation  | Construction   | Operation   |
| LR1   | Mangrove        | High                              | <b>Negligible</b><br>There is virtually no change in the area.                   | <b>Negligible</b><br>There is virtually no change in the area. | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.        | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality. |
| LR2   | Marsh / Reedbed | High                              | <b>Negligible</b><br>There is virtually no change in the area.                   | <b>Negligible</b><br>There is virtually no change in the area. | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.        | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality. |
| LR3   | Pond            | Medium                            | <b>Negligible</b><br>There is virtually no change in the area.                   | <b>Negligible</b><br>There is virtually no change in the area. | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.        | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality. |
| LR4   | Woodland        | High                              | <b>Negligible</b><br>There is virtually no change in the area.                   | <b>Negligible</b><br>There is virtually no change in the area. | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.        | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality. |
| LR9   | Plantation      | Medium                            | <b>Negligible</b><br>There is virtually no change in the area.                   | <b>Negligible</b><br>There is virtually no change in the area. | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.        | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality. |
| LR7   | Coastal Area    | Medium                            | <b>Negligible</b><br>There is virtually no change in the area.                   | <b>Negligible</b><br>There is virtually no change in the area. | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.        | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality. |



| Landscape Resources /<br>Landscape Character Areas |                         | Sensitivity<br>(Low,<br>Medium or<br>High) | Magnitude of Change<br>before Mitigation<br>(Negligible, Small,<br>Intermediate or Large) |  | Impact Significance Threshold before<br>Mitigation (Insubstantial, Slight,<br>Moderate or Substantial)   |  |
|--|-------------------------|--|---|--|--|--|
|  |                         |  | Construction  | Operation  | Construction   | Operation  |
| LR8  | Waterbody               | Medium                                     | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LR11   | Village                 | Medium                                     | <b>Small</b><br>There is virtually imperceptible change or temporary change.              | <b>Small</b><br>There is virtually imperceptible change or temporary change. | <b>Slight</b><br>There is adverse or beneficial impact where the proposal would cause a barely perceptible deterioration or improvement in existing landscape quality. | <b>Slight</b><br>There is adverse or beneficial impact where the proposal would cause a barely perceptible deterioration or improvement in existing landscape quality. |
| LR12   | Developed Area          | Low  | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LCA1   | Institutional           | Low  | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LCA3   | Transportation Corridor | Low  | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LCA4   | Woodland and Hillside   | High                                       | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |





| Landscape Resources /<br>Landscape Character Areas |                                      | Sensitivity<br>(Low,<br>Medium or<br>High) | Magnitude of Change<br>before Mitigation<br>(Negligible, Small,<br>Intermediate or Large) |  | Impact Significance Threshold before<br>Mitigation (Insubstantial, Slight,<br>Moderate or Substantial)   |  |
|--|--------------------------------------|--|---|--|--|--|
|  |                                      |  | Construction  | Operation  | Construction   | Operation  |
| LCA5   | Village                              | Medium                                     | <b>Small</b><br>There is virtually imperceptible change or temporary change.              | <b>Small</b><br>There is virtually imperceptible change or temporary change. | <b>Slight</b><br>There is adverse or beneficial impact where the proposal would cause a barely perceptible deterioration or improvement in existing landscape quality. | <b>Slight</b><br>There is adverse or beneficial impact where the proposal would cause a barely perceptible deterioration or improvement in existing landscape quality. |
| LCA6   | Waterbody                            | High                                       | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LCA7   | Mangrove / Marsh /<br>Reedbed        | High                                       | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |
| LCA9   | Waterbody (Pond<br>or River Channel) | Medium                                     | <b>Negligible</b><br>There is virtually no change in the area.                            | <b>Negligible</b><br>There is virtually no change in the area.               | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.  |



### Proposed Sewers Works

11.7.10 The potential sources of landscape impacts in the construction phase for the proposed sewers works include:

- Excavation for sewer laying works; and
- Temporary stockpiling of excavated materials and construction materials.

11.7.11 No potential sources of landscape impacts during the operation phase are anticipated for the underground sewers.

11.7.12 The assessment on magnitude of change and impact significance for landscape resources and landscape character areas in the construction and operation phases of proposed Sewers Works is presented in **Table 11.16**.

**Table 11.16 : Assessment on Magnitude of Change and Impact Significance for Landscape Resources and Landscape Character Areas in the Construction and Operation Phases of proposed Sewers Works**

| Landscape Resources / Landscape Character Areas |         | Sensitivity (Low, Medium or High) | Magnitude of Change before Mitigation (Negligible, Small, Intermediate or Large) |  | Impact Significance Threshold before Mitigation (Insubstantial, Slight, Moderate or Substantial) |   |
|---|---------|-----------------------------------|--|--|--|---|
|   |         |                                   | Construction   | Operation  | Construction   | Operation   |
| LR11  | Village | Medium                            | <b>Negligible</b><br>There is virtually no change in the area.                   | <b>Negligible</b><br>There is virtually no change in the area. | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.        | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality. |
| LCA5  | Village | Medium                            | <b>Negligible</b><br>There is virtually no change in the area.                   | <b>Negligible</b><br>There is virtually no change in the area. | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality.        | <b>Insubstantial</b><br>There is no discernible change in the existing landscape quality. |

### 11.8 Recommended Mitigation Measures

11.8.1 The proposed mitigation measure for landscape and visual impacts in both the construction and operation phases are listed in **Table 11.17** and **Table 11.18** respectively. Implementation agents and management/maintenance agents of the proposed mitigation measures are also identified. The agreement is sought with regard to the funding, implementation, management and maintenance agencies. The typical photos of the proposed CM-1 Visual Screen/Hoarding are shown in **Appendix 11.4** for reference.

11.8.2 The mitigation measures during construction will be implemented from the commencement of the works and shall be applied for the entire duration of the construction period. The mitigation measures during operation will be constructed or built up during the construction stage. Management and maintenance for all mitigation measures on landscape design will follow DEVB TCW No. 6/2015 Maintenance of Vegetation and Hard Landscape Features. The aesthetic design of



the proposed structures will follow the requirements in the Guidelines on Aesthetic Design of Pumping Station Buildings and submitted to Vetting Committee on Aesthetic Design of Pumping Station Buildings (VCAB) for approval in accordance with DSD TC No. 9/2006, and circulated to ASD for comment in accordance with ETWB TCW No. 8/2005.

- 11.8.3 Existing trees conditions within the proposed site of proposed Tai O STW, Hang Mei SPS and Fan Kwai Tong SPS were recorded by the Tree Survey carried out under "Agreement No. CE 31/2007 (DS) Upgrading of Cheung Chau and Tai O Sewage Collection, Treatment and Disposal Facilities – Investigation" in March and April 2009. There are 1 no. of existing trees at the proposed site of proposed Tai O STW, 2 nos. of trees at the proposed site of Hang Mei SPS and 3 nos. of trees at the proposed site of Fan Kwai Tong SPS. The tree conditions and tree schedule is shown in **Appendix 11.1**. Preliminary landscape design plan is shown in **Appendix 11.2** for reference. However, this preliminary landscape design plan may be subject to change during detailed design stage when updated tree survey data is obtained for the preparation of tree removal application. The technical feasibility of tree transplanting such as machinery, logistic, tree nursery etc. would also be further considered. As a general principle, compensatory planting would be implemented to fully compensate for the tree and vegetation loss if transplanting of trees is not feasible or not preferable. The total number of compensatory tree planted in the project area shall not be less than 1:1 ratios by new trees in terms of quality and quantity, i.e. the total numbers and the aggregated girth size of compensatory trees within the site and off-site should not be less than that of the tree(s) to be felled. The required numbers and locations of compensatory trees would be determined and agreed with Government during the tree removal application process under DEVB TCW No. 7/2015 - Tree Preservation.

Table 11.17 : Proposed Mitigation Measures during Construction Phase

| Landscape and Visual Impact Mitigation Measures |  | Implementation Agent | Management /Maintenance Agent | Party Responsible for funding |
|---|--|----------------------|-------------------------------|-------------------------------|
| CM-1  | Visual Screen/Hoarding<br><br>Decorative hoarding or boundary fence for construction sites shall be considered, and designed to be compatible to the surroundings. | Contractors          | DSD                           | DSD                           |



| Landscape and Visual Impact Mitigation Measures |   | Implementation Agent | Management /Maintenance Agent | Party Responsible for funding |
|---|---|----------------------|-------------------------------|-------------------------------|
| CM-2  | <p>Protection to Existing Trees within Works Areas</p> <p>All existing trees which are not in direct conflict with the proposed works will be retained. The existing trees proposed to be retained shall be properly maintained and protected by means of fencing to prevent vehicular or pedestrian intrusion that may potentially damage tree canopies, trunks and root zones. Detailed tree protection specifications shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and tree monitoring system. For trees with high preservation value, individual tree assessments and continuous tree monitoring reports shall be provided by a certified Arborist, Landscape Architect or related professional during construction. All retained trees shall be recorded photographically at the commencement of contract.</p> <p>Root pruning to the retained trees should be prohibited. Retained trees should be well-preserved by setting up a tree protection zone throughout the construction period for protecting the retained trees from damages.</p> <p>To maximize protection to existing trees and ground vegetation, construction contracts may designate "No-intrusion Zone" to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should close monitor and restrict the site working staff not to enter the "no-intrusion zone", even for non-direct construction activities and storage of equipment.</p> | DSD and Contractors  | DSD                           | DSD                           |



| Landscape and Visual Impact Mitigation Measures |   | Implementation Agent | Management /Maintenance Agent | Party Responsible for funding |
|---|---|----------------------|-------------------------------|-------------------------------|
| CM-3  | <p>Tree Transplanting</p> <p>Existing trees to be affected shall be directly transplanted to the proposed tree receiving sites. The construction programme should also allow sufficient time for root pruning and root ball preparation prior to transplanting, if necessary, and transplanting operations to be carried out in planting season.</p> <p>Tree pruning such as topping, lion tailing would be prohibited as far as possible. Also, frequent keep watering would be necessary for transplanting trees. The proposed tree preservation measures during construction would be carried out and approved by the competent persons.</p> <p>Compensatory planting would be implemented to fully compensate for the tree and vegetation loss if transplanting of trees is considered not feasible or not preferable.</p> <p>Early preparation of trees to be transplanted shall be undertaken to increase their likely survival rate following transplanting.</p> | Contractors          | DSD                           | DSD                           |
| CM-4  | <p>Construction Light</p> <p>Security floodlight for construction areas shall be controlled, such as equipped with adjustable shield, frosted diffusers and reflective covers, at night to avoid excessive glare to the nearby areas and residents. Other security measures shall also be considered to minimize the visual impacts by construction light.</p>  | Contractors          | DSD                           | DSD                           |
| CM-5  | <p>Dust and Erosion Control for Exposed Soil</p> <p>Excavation works and demolition of existing building blocks shall be well planned with precautions to suppress dust. Exposed soil shall be covered or watered often. Areas that are expected to be left with bare soil for a long period of time after excavation shall be properly covered with suitable protective fabric. Suitable drainage shall be provided around construction sites to avoid discharge of contaminants and sediments into sensitive water-based habitats.</p>  | Contractors          | DSD                           | DSD                           |



| Landscape and Visual Impact Mitigation Measures |  | Implementation Agent | Management /Maintenance Agent | Party Responsible for funding |
|---|--|----------------------|-------------------------------|-------------------------------|
| CM-6  | Reinstatement of Works Areas<br><br>The affected works areas including affected landscape shall be properly reinstated to the satisfaction of relevant government departments. | Contractors          | DSD                           | DSD                           |

**Table 11.18 : Proposed Mitigation Measures during Operation Phase**

| Landscape and Visual Impact Mitigation Measures |  | Implementation Agent | Management/ Maintenance Agent | Party Responsible for funding |
|---|--|----------------------|-------------------------------|-------------------------------|
| OM-1  | Architectural and Landscape Design<br><br>The appearance of the proposed structures shall be properly designed, including a careful selection of material, colour and texture, so as to fit into the existing suburban, natural to semi-natural surroundings. The aesthetic design of the proposed structures will follow the requirements in the Guidelines on Aesthetic Design of Pumping Station Buildings and submitted to Vetting Committee on Aesthetic Design of Pumping Station Buildings (VCAB) for approval in accordance with DSD TC No. 9/2006, and circulated to ASD for comment in accordance with ETWB TCW No. 8/2005. Sufficient planting will be provided around the boundary fence of the proposed buildings for screening. Buffer planting will also be provided. All mitigation measures should also be properly annotated on the photomontages. | DSD                  | DSD                           | DSD                           |
| OM-2  | Establishment Period<br><br>A 12-month establishment period for the soft landscape works shall be allowed in the main contract for contractor to carry out routine horticultural operations, including watering, pruning, weeding, pest control, replacement of dead plants etc. to ensure healthy establishment of new planting during a 12 month establishment period. This period can also serve as a kind of warranty/guarantee on the quality of the plants supplied and installed by the contractor. Monthly monitoring during the first year of establishment period is recommended.  | DSD and Contractors  | DSD                           | DSD                           |



| Landscape and Visual Impact Mitigation Measures |  | Implementation Agent | Management/Maintenance Agent | Party Responsible for funding |
|---|--|----------------------|------------------------------|-------------------------------|
| OM-3  | Seawall Design<br>The design of the seawall for Tai O STW shall be in keeping with the adjacent landscape character. | DSD                  | DSD                          | DSD                           |

- 11.8.4 The sensitivity, the magnitude of change before mitigation, impact significant threshold before mitigation, recommended mitigation measures and residual impact significance threshold after mitigation (Day 1 and Year 10) for the LRs and LCAs on landscape impacts are shown in **Table 11.19**.
- 11.8.5 The sensitivity, the magnitude of change before mitigation, impact significant threshold before mitigation, recommended mitigation measures and residual impact significance threshold after mitigation for the LRs and LCAs on landscape impacts are shown in **Table 11.20** and **Table 11.21**, for the proposed Hang Mei SPS and Fan Kwai Tong SPS respectively.





**Table 11.19 : Significance of the Landscape Impacts in the Construction and Operation Phases of proposed Tai O STW**

| Landscape Resources /<br>Landscape Character Areas |                 | Sensitivity<br>(Low,<br>Medium or<br>High) | Magnitude of Change<br>before Mitigation<br>(Negligible, Small,<br>Intermediate or Large) |            | Impact Significance Threshold before<br>Mitigation (Insubstantial, Slight,<br>Moderate or Substantial) <sup>(3)</sup> |               | Recommended<br>Mitigation<br>Measures <sup>(1)</sup> | Residual Impact Significance Threshold after<br>Mitigation (Insubstantial, Slight, Moderate or<br>Substantial) <sup>(2,3)</sup> |                      |                        |
|--|-----------------|--|---|------------|---|---------------|--|---|----------------------|------------------------|
|  |                 |  | Construction  | Operation  | Construction  | Operation     |  | Construction  | Operation<br>(Day 1) | Operation<br>(Year 10) |
| LR1  | Mangrove        | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR2  | Marsh / Reedbed | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR3  | Pond            | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR4  | Woodland        | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR5  | Shrubland       | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR6  | Grassland       | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR7  | Coastal Area    | High                                       | Intermediate  | Small      | Moderate  | Slight        | CM-1, CM-2,<br>CM-4, CM-5,<br>OM-1, OM-2,<br>OM-3    | Slight  | Insubstantial        | Insubstantial          |
| LR8  | Waterbody       | Medium                                     | Intermediate  | Small      | Moderate  | Slight        | N/A  | Moderate  | Slight               | Slight                 |
| LR11   | Village         | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR12   | Developed Area  | Low  | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |



| Landscape Resources /<br>Landscape Character Areas |                                      | Sensitivity<br>(Low,<br>Medium or<br>High) | Magnitude of Change<br>before Mitigation<br>(Negligible, Small,<br>Intermediate or Large) |            | Impact Significance Threshold before<br>Mitigation (Insubstantial, Slight,<br>Moderate or Substantial) <sup>(3)</sup> |               | Recommended<br>Mitigation<br>Measures <sup>(1)</sup> | Residual Impact Significance Threshold after<br>Mitigation (Insubstantial, Slight, Moderate or<br>Substantial) <sup>(2,3)</sup> |                      |                        |
|--|--------------------------------------|--|---|------------|---|---------------|--|---|----------------------|------------------------|
|  |                                      |  | Construction  | Operation  | Construction  | Operation     |  | Construction  | Operation<br>(Day 1) | Operation<br>(Year 10) |
| LCA1   | Institutional                        | Low  | Small   | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA2   | Coastal Area with<br>Slope           | High                                       | Intermediate  | Small      | Moderate  | Slight        | CM-1, CM-2,<br>CM-4, CM-5,<br>OM-1, OM-2,<br>OM-3    | Slight  | Insubstantial        | Insubstantial          |
| LCA3   | Transportation<br>Corridor           | Low  | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA4   | Woodland and<br>Hillside             | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA5   | Village                              | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA6   | Waterbody                            | Medium                                     | Intermediate  | Small      | Moderate  | Slight        | N/A  | Moderate  | Slight               | Slight                 |
| LCA7   | Mangrove / Marsh<br>/ Reedbed        | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA9   | Waterbody (Pond<br>or River Channel) | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |

Notes:

- (1) Recommendation on landscape and visual mitigation measures are described in Section 11.8.
- (2) Residual impacts are discussed in Section 11.9.
- (3) All impacts are adverse and irreversible unless otherwise stated



**Table 11.20 : Significance of the Landscape Impacts in the Construction and Operation Phases of proposed Hang Mei SPS**

| Landscape Resources /<br>Landscape Character Areas |                   | Sensitivity<br>(Low,<br>Medium or<br>High) | Magnitude of Change<br>before Mitigation<br>(Negligible, Small,<br>Intermediate or Large) |            | Impact Significance Threshold before<br>Mitigation (Insubstantial, Slight,<br>Moderate or Substantial) <sup>(3)</sup> |               | Recommended<br>Mitigation<br>Measures <sup>(1)</sup> | Residual Impact Significance Threshold after<br>Mitigation (Insubstantial, Slight, Moderate or<br>Substantial) <sup>(2,3)</sup> |                      |                        |
|--|-------------------|--|---|------------|---|---------------|--|---|----------------------|------------------------|
|  |                   |  | Construction  | Operation  | Construction  | Operation     |  | Construction  | Operation<br>(Day 1) | Operation<br>(Year 10) |
| LR1  | Mangrove          | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR2  | Marsh / Reedbed   | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR3  | Pond              | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR4  | Woodland          | High                                       | Small   | Small      | Slight  | Slight        | CM-1, CM-3,<br>CM-4, CM-5,<br>CM-6, OM-1,<br>OM-2    | Insubstantial   | Insubstantial        | Insubstantial          |
| LR9  | Plantation        | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR5  | Shrubland         | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR6  | Grassland         | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR10   | Agricultural Land | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR11   | Village           | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR12   | Developed Area    | Low  | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR8  | Waterbody         | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA1   | Institutional     | Low  | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |



| Landscape Resources /<br>Landscape Character Areas |                                      | Sensitivity<br>(Low,<br>Medium or<br>High) | Magnitude of Change<br>before Mitigation<br>(Negligible, Small,<br>Intermediate or Large) |            | Impact Significance Threshold before<br>Mitigation (Insubstantial, Slight,<br>Moderate or Substantial) <sup>(3)</sup> |               | Recommended<br>Mitigation<br>Measures <sup>(1)</sup> | Residual Impact Significance Threshold after<br>Mitigation (Insubstantial, Slight, Moderate or<br>Substantial) <sup>(2,3)</sup> |                      |                        |
|--|--------------------------------------|--|---|------------|---|---------------|--|---|----------------------|------------------------|
|  |                                      |  | Construction  | Operation  | Construction  | Operation     |  | Construction  | Operation<br>(Day 1) | Operation<br>(Year 10) |
| LCA3   | Transportation<br>Corridor           | Low  | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA4   | Woodland and<br>Hillside             | High                                       | Small   | Small      | Slight  | Slight        | CM-1, CM-3,<br>CM-4, CM-5,<br>CM-6, OM-1,<br>OM-2    | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA5   | Village                              | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA6   | Waterbody                            | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA7   | Mangrove / Marsh /<br>Reedbed        | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA8   | Medium Rise<br>Residential           | Low  | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA9   | Waterbody (Pond<br>or River Channel) | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA10  | Agricultural Land                    | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |

Notes:

- (1) Recommendation on landscape and visual mitigation measures are described in Section 11.8.
- (2) Residual impacts are discussed in Section 11.9.
- (3) All impacts are adverse and irreversible unless otherwise stated.



**Table 11.21 : Significance of the Landscape Impacts in the Construction and Operation Phases of proposed Fan Kwai Tong SPS**

| Landscape Resources /<br>Landscape Character Areas |                            | Sensitivity<br>(Low,<br>Medium or<br>High) | Magnitude of Change<br>before Mitigation<br>(Negligible, Small,<br>Intermediate or Large) |            | Impact Significance Threshold before<br>Mitigation (Insubstantial, Slight,<br>Moderate or Substantial) <sup>(3)</sup> |               | Recommended<br>Mitigation<br>Measures <sup>(1)</sup> | Residual Impact Significance Threshold after<br>Mitigation (Insubstantial, Slight, Moderate or<br>Substantial) <sup>(2,3)</sup> |                      |                        |
|--|----------------------------|--|---|------------|---|---------------|--|---|----------------------|------------------------|
|  |                            |  | Construction  | Operation  | Construction  | Operation     |  | Construction  | Operation<br>(Day 1) | Operation<br>(Year 10) |
| LR1  | Mangrove                   | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR2  | Marsh / Reedbed            | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR3  | Pond                       | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR4  | Woodland                   | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR9  | Plantation                 | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR7  | Coastal Area               | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR8  | Waterbody                  | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LR11   | Village                    | Medium                                     | Small   | Small      | Slight  | Slight        | CM-1, CM-3,<br>CM-4, CM-5,<br>CM-6, OM-1,<br>OM-2    | Insubstantial   | Insubstantial        | Insubstantial          |
| LR12   | Developed Area             | Low  | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA1   | Institutional              | Low  | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA3   | Transportation<br>Corridor | Low  | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |



| Landscape Resources /<br>Landscape Character Areas |                                      | Sensitivity<br>(Low,<br>Medium or<br>High) | Magnitude of Change<br>before Mitigation<br>(Negligible, Small,<br>Intermediate or Large) |            | Impact Significance Threshold before<br>Mitigation (Insubstantial, Slight,<br>Moderate or Substantial) <sup>(3)</sup> |               | Recommended<br>Mitigation<br>Measures <sup>(1)</sup> | Residual Impact Significance Threshold after<br>Mitigation (Insubstantial, Slight, Moderate or<br>Substantial) <sup>(2,3)</sup> |                      |                        |
|--|--------------------------------------|--|---|------------|---|---------------|--|---|----------------------|------------------------|
|  |                                      |  | Construction  | Operation  | Construction  | Operation     |  | Construction  | Operation<br>(Day 1) | Operation<br>(Year 10) |
| LCA4   | Woodland and<br>Hillside             | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA5   | Village                              | Medium                                     | Small   | Small      | Slight  | Slight        | CM-1, CM-3,<br>CM-4, CM-5,<br>CM-6, OM-1,<br>OM-2    | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA6   | Waterbody                            | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA7   | Mangrove / Marsh /<br>Reedbed        | High                                       | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA9   | Waterbody (Pond<br>or River Channel) | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | N/A  | Insubstantial   | Insubstantial        | Insubstantial          |

Notes:

(1) Recommendation on landscape and visual mitigation measures are described in Section 11.8.

(2) Residual impacts are discussed in Section 11.9.

(3) All impacts are adverse and irreversible unless otherwise stated.



**Table 11.22 : Significance of the Landscape Impacts in the Construction and Operation Phases of proposed Sewers Works**

| Landscape Resources /<br>Landscape Character Areas |         | Sensitivity<br>(Low,<br>Medium or<br>High) | Magnitude of Change<br>before Mitigation<br>(Negligible, Small,<br>Intermediate or Large) |            | Impact Significance Threshold before<br>Mitigation (Insubstantial, Slight,<br>Moderate or Substantial) <sup>(3)</sup> |               | Recommended<br>Mitigation<br>Measures <sup>(1)</sup> | Residual Impact Significance Threshold after<br>Mitigation (Insubstantial, Slight, Moderate or<br>Substantial) <sup>(2,3)</sup> |                      |                        |
|--|---------|--|---|------------|---|---------------|--|---|----------------------|------------------------|
|  |         |  | Construction  | Operation  | Construction  | Operation     |  | Construction  | Operation<br>(Day 1) | Operation<br>(Year 10) |
| LR11   | Village | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | CM-2, CM-4,<br>CM-5, CM-6                            | Insubstantial   | Insubstantial        | Insubstantial          |
| LCA5   | Village | Medium                                     | Negligible  | Negligible | Insubstantial   | Insubstantial | CM-2, CM-4,<br>CM-5, CM-6                            | Insubstantial   | Insubstantial        | Insubstantial          |

Notes:

- (1) Recommendation on landscape and visual mitigation measures are described in Section 11.8.
- (2) Residual impacts are discussed in Section 11.9.
- (3) All impacts are adverse and irreversible unless otherwise stated.





### Visual Impacts

- 11.8.6 The visual impacts to the VSRs during construction and operation phases of the proposed Tai O STW, Hang Mei SPS and Fan Kwai Tong SPS are generally due to the sources as described in **Sections 11.7.1, 11.7.2, 11.7.5 and 11.7.6**.
- 11.8.7 The magnitude of change for each of the VSRs of the proposed Tai O STW, Hang Mei SPS and Fan Kwai Tong SPS are shown in **Table 11.23, Table 11.25 and Table 11.27** respectively.
- 11.8.8 Based on the “Sensitivity of VSRs” and “Magnitude of Change”, the impact significant threshold before mitigation, recommended mitigation measures and residual impact significance threshold after mitigation (Day 1 and Year 10) for the VSRs of the proposed Tai O STW, Hang Mei SPS and Fan Kwai Tong SPS are shown in **Table 11.24, Table 11.26 and Table 11.28** respectively.



**Table 11.23 : Magnitude of Change of VSRs in the Construction and Operation Phases of proposed Tai O STW**

| VSR       | Compatibility of the proposed development with the surrounding landscape | Scale of the development | Reversibility of change | Viewing distance (m) | Potential blockage of view                     | Duration of Impact |   | Magnitude of Change BEFORE Mitigation<br>(Negligible, Small, Intermediate, Large) |              |
|-----------|--|--------------------------|-------------------------|----------------------|--|--------------------|---|---|--------------|
|           |  |                          |                         |                      |  | Construction       | Operation   | Construction  | Operation    |
|           |  |                          |                         |                      |  | VSR STW-1          | Low, the view of the site is generally coastal area | Medium  | Irreversible |
| VSR STW-2 | Low, the view of the site is generally coastal area and open sea         | Medium                   | Irreversible            | Under 25             | Slight blockage of view to the open sea behind | Temporary          | Permanent   | Intermediate  | Intermediate |

**Table 11.24 : Significance of the Visual Impacts in the Construction and Operation Phases of proposed Tai O STW**

| Visual Sensitive Receivers | Sensitivity (Low, Medium, High) | Magnitude of Change before Mitigation (Negligible, Small, Intermediate, Large) |              | Impact Significance Threshold before Mitigation (Insubstantial, Slight, Moderate, Substantial) |                   | Recommended Mitigation Measures <sup>(1)</sup> | Residual Impact Significance Threshold after Mitigation (Insubstantial, Slight, Moderate, Substantial) <sup>(2,3)</sup> |                   |                              |
|----------------------------|---------------------------------|--|--------------|--|-------------------|--|---|-------------------|------------------------------|
|                            |                                 | Construction   | Operation    | Construction   | Operation         |  | Construction  | Operation (Day 1) | Operation (Year 10)          |
|                            |                                 | VSR STW-1  | Low          | Intermediate   | Intermediate      |  | Slight / Moderate   | Slight / Moderate | CM-1, CM-2, CM-4, OM-1, OM-2 |
| VSR STW-2                  | Low                             | Intermediate   | Intermediate | Slight / Moderate  | Slight / Moderate | CM-1, CM-2, CM-4, OM-1, OM-2                   | Slight  | Slight            | Slight                       |

Notes:

- (1) Recommendation on landscape and visual mitigation measures are described in Section 11.8.
- (2) Residual impacts are discussed in Section 11.9.
- (3) All impacts are adverse and irreversible unless otherwise stated.



**Table 11.25 : Magnitude of Change of VSRs in the Construction and Operation Phases of proposed Hang Mei SPS**

| VSR      | Compatibility of the proposed development with the surrounding landscape   | Scale of the development | Reversibility of change | Viewing distance (m) | Potential blockage of view | Duration of Impact |  | Magnitude of Change BEFORE Mitigation<br>(Negligible, Small, Intermediate, Large) |              |
|----------|--|--------------------------|-------------------------|----------------------|----------------------------|--------------------|--|---|--------------|
|          |  |                          |                         |                      |                            | Construction       | Operation  | Construction  | Operation    |
|          |  |                          |                         |                      |                            | VSR HM-1           | Medium, there is existing developed road and village developments adjacent | Small   | Irreversible |
| VSR HM-2 | Medium, there is existing developed road and village developments adjacent | Medium                   | Irreversible            | 15                   | Negligible blockage        | Temporary          | Permanent  | Intermediate  | Small        |
| VSR HM-3 | Medium, there is existing developed road and village developments adjacent | Medium                   | Irreversible            | 30 - 100             | Negligible blockage        | Temporary          | Permanent  | Negligible  | Negligible   |



**Table 11.26 : Significance of the Visual Impacts in the Construction and Operation Phases of proposed Hang Mei SPS**

| Visual Sensitive Receivers | Sensitivity (Low, Medium, High) | Magnitude of Change before Mitigation (Negligible, Small, Intermediate, Large) |            | Impact Significance Threshold before Mitigation (Insubstantial, Slight, Moderate, Substantial) |                        | Recommended Mitigation Measures <sup>(1)</sup> | Residual Impact Significance Threshold after Mitigation (Insubstantial, Slight, Moderate, Substantial) <sup>(2,3)</sup> |                        |                        |
|----------------------------|---------------------------------|--|------------|--|------------------------|--|---|------------------------|------------------------|
|                            |                                 | Construction   | Operation  | Construction   | Operation              |  | Construction  | Operation (Day 1)      | Operation (Year 10)    |
| VSR HM-1                   | Low                             | Small  | Small      | Insubstantial / Slight   | Insubstantial / Slight | CM-1, CM-4, CM-6, OM-1, OM-2                   | Insubstantial   | Insubstantial / Slight | Insubstantial / Slight |
| VSR HM-2                   | Low                             | Intermediate   | Small      | Slight / Moderate  | Insubstantial / Slight | CM-1, CM-4, CM-6, OM-1, OM-2                   | Slight  | Insubstantial / Slight | Insubstantial / Slight |
| VSR HM-3                   | Medium                          | Negligible   | Negligible | Insubstantial  | Insubstantial          | N/A  | Insubstantial   | Insubstantial          | Insubstantial          |

Notes:

- (1) Recommendation on landscape and visual mitigation measures are described in Section 11.8.
- (2) Residual impacts are discussed in Section 11.9.
- (3) All impacts are adverse and irreversible unless otherwise stated.



**Table 11.27 : Magnitude of Change of VSRs in the Construction and Operation Phases of proposed Fan Kwai Tong SPS**

| VSR       | Compatibility of the proposed development with the surrounding landscape | Scale of the development | Reversibility of change | Viewing distance (m) | Potential blockage of view  | Duration of Impact |   | Magnitude of Change BEFORE Mitigation<br>(Negligible, Small, Intermediate, Large) |              |
|-----------|--|--------------------------|-------------------------|----------------------|-----------------------------|--------------------|---|---|--------------|
|           |  |                          |                         |                      |                             | Construction       | Operation                                 | Construction  | Operation    |
|           |  |                          |                         |                      |                             | VSR FKT-1          | High, village houses development adjacent | Small   | Irreversible |
| VSR FKT-2 | High, village houses development adjacent                                | Small                    | Irreversible            | 30                   | Negligible blockage of view | Temporary          | Permanent                                 | Negligible  | Negligible   |
| VSR FKT-3 | High, village houses development adjacent                                | Small                    | Irreversible            | 6                    | Negligible blockage of view | Temporary          | Permanent                                 | Intermediate  | Intermediate |



**Table 11.28 : Significance of the Visual Impacts in the Construction and Operation Phases of proposed Fan Kwai Tong SPS**

| Visual Sensitive Receivers | Sensitivity (Low, Medium, High) | Magnitude of Change before Mitigation (Negligible, Small, Intermediate, Large) |              | Impact Significance Threshold before Mitigation (Insubstantial, Slight, Moderate, Substantial) |               | Recommended Mitigation Measures <sup>(1)</sup> | Residual Impact Significance Threshold after Mitigation (Insubstantial, Slight, Moderate, Substantial) <sup>(2,3)</sup> |                   |                     |
|----------------------------|---------------------------------|--|--------------|--|---------------|--|---|-------------------|---------------------|
|                            |                                 | Construction   | Operation    | Construction   | Operation     |  | Construction  | Operation (Day 1) | Operation (Year 10) |
| VSR FKT-1                  | Medium                          | Intermediate   | Intermediate | Moderate   | Moderate      | CM-1, CM-4, CM-6, OM-1, OM-2                   | Slight  | Slight            | Slight              |
| VSR FKT-2                  | Low                             | Negligible   | Negligible   | Insubstantial  | Insubstantial | N/A  | Insubstantial   | Insubstantial     | Insubstantial       |
| VSR FKT-3                  | Medium                          | Intermediate   | Intermediate | Moderate   | Moderate      | CM-1, CM-4, CM-6, OM-1, OM-2                   | Slight  | Slight            | Slight              |

Notes:

- (1) Recommendation on landscape and visual mitigation measures are described in Section 11.8.
- (2) Residual impacts are discussed in Section 11.9.
- (3) All impacts are adverse and irreversible unless otherwise stated.



## 11.9 Residual Landscape and Visual Impacts

- 11.9.1 Before applying any mitigation measures, the landscape impacts during construction and operation to the identified LRs, LCAs and VSRs for the proposed Tai O STW are generally ranged as “Insubstantial”, “Slight” and “Moderate” as shown in **Table 11.19**. The landscape impacts during construction and operation to the identified LRs, LCAs and VSRs for the proposed Hang Mei SPS and Fan Kwai Tong SPS are generally ranged as “Insubstantial” and “Slight” as shown in **Table 11.20** and **11.21** respectively.
- 11.9.1A The landscape impacts in the Construction and Operation Phases of proposed Sewers Works at Nam Chung Tsuen are “Insubstantial” and “Insubstantial” respectively. Nevertheless, mitigation measures during construction phase as shown in **Table 11.22** are also recommended.
- 11.9.2 Mitigation measures are recommended to mitigate LRs and LCAs with the possible landscape impact level of “Slight” and “Moderate”. The potential residual landscape impacts for the proposed Tai O STW, Hang Mei SPS and Fan Kwai Tong SPS during construction and operation after mitigation are also provided in **Table 11.19**, **11.20** and **11.21** respectively.
- 11.9.3 By introducing mitigation measures, the residual landscape impacts to LR7 and LCA2 during construction and operation for the proposed Tai O STW will be ranged as “slight”, and “Insubstantial” respectively. The residual landscape impacts to LR8 and LCA6 during construction and operation for the proposed Tai O STW will remain as “moderate” and “slight” respectively. The residual landscape impacts to affected LRs and LCAs during construction and operation for the proposed Hang Mei SPS and Fan Kwai Tong SPS will be ranged as “Insubstantial” and “Insubstantial” respectively.
- 11.9.4 The visual impacts during construction and operation to the identified VSR for the proposed Tai O STW are “Slight / Moderate” as presented in **Table 11.23**. Respective mitigation measures are proposed and the residual visual impact levels to the identified VSR for the proposed Tai O STW will be lowered down to “Slight” during construction stage and operation stage.
- 11.9.5 The visual impacts during construction and operation to the identified VSR for the proposed Hang Mei SPS and Fan Kwai Tong SPS are classified as “Insubstantial / Slight / Moderate” (as presented in **Table 11.25** and **Table 11.27**). Respective mitigation measures are proposed and the residual visual impact levels to the identified VSR for the proposed Fan Kwai Tong SPS will be lowered down to “Insubstantial” and “Slight” during construction stage and operation stage. The residual visual impact levels to the identified VSR for the proposed Hang Mei SPS will be lowered down to “Insubstantial” and “Slight” during construction stage while during operation phase, the residual visual impact levels will be remained as “Insubstantial / Slight”.
- 11.9.6 Existing and planned setting in four stages (existing condition, proposed development without mitigation, proposed development with mitigation on Day 1 and proposed development with mitigation in Year 10) from various identified VSRs for the proposed Tai O STW, Hang Mei SPS and Fan Kwai Tong SPS are shown in **Figure 11.16** to **Figure 11.23**.

## 11.10 Conclusion

- 11.10.1 Landscape and visual impact assessment has been carried out for the proposed expansion and upgrading of the Tai O STW, proposed Hang Mei SPS and proposed





Fan Kwai Tong SPS, to be carried out within the boundary of the proposed extent of site respectively.

- 11.10.2 The proposed new and upgrading of sewers will mainly be laid underground along the existing carriageway, footpaths and paved tracks. The alignment of the proposed underground sewer will be designed away from existing trees such that no existing trees will be affected by the proposed sewer. The construction works will be carried out section by section in a local area with a short period of time, in order to reduce to disturbance to the surrounding areas and nearby residents. The works area will be reinstated to its original conditions. Landscape and visual impact during construction and operation stage of the sewers is considered to be negligible.
- 11.10.3 LRs, LCAs and VSRs are identified within the study area to assess the landscape and visual impacts arising from the proposed expansion and upgrading of the Tai O STW, proposed Hang Mei SPS, Fan Kwai Tong SPS and sewer works at Nam Chung Tsuen. Impact significance and mitigation measures are recommended and discussed. For the proposed Tai O STW, the residual landscape and visual impacts after mitigations are considered to be “Slight” and “Insubstantial”. While for the proposed Hang Mei SPS and Fan Kwai Tong SPS, the residual landscape and visual impacts after mitigations are considered to be “Insubstantial” and “Slight” respectively. “Insubstantial” landscape impact is envisaged for the proposed sewer works. With reference to the criteria defined in Annex 10 of the EIAO TM, landscape and visual impacts in the construction and operation phases arising from the proposed works will be considered as acceptable with mitigation measures.