

Appendix 8.6 Preliminary Woodland Enhancement Planting Plan

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1 Introduction

1.1 Background

- 1.1.1 This Preliminary Woodland Enhancement Planting Plan has been developed to facilitate the establishment of the proposed Woodland Enhancement Planting area (WEPA) to bring better ecological performance of the area under the implementation of the Project.
- 1.1.2 The ecological impact assessment is given in details in the Main EIA report Chapter 8.

2 Objective of the Establishment of WEPA

- 2.1.1 The objective of the WEPA is to re-create a woodland habitat on existing non-woodland areas with compensatory planting of native tree species.
- 2.1.2 The locations of the proposed WEPA are shown in Figure 8.4 of the EIA Report.

3 Extent of WEPA

- 3.1.1 According to the ecological impact assessment of the EIA, 1.2ha of woodland areas at W3 will be permanently lost for the construction of a new road L7 near Po Tong Ha. Although no significant adverse impact is anticipated, woodland enhancement planting is recommended to improve the ecological performance of the project.
- 3.1.2 The proposed WEPA is 1.2ha in total size.
- 3.1.3 As the woodland enhancement planting area is proposed on an existing village/orchard habitat characterised by the presence of scattered building structures and fruit trees, key site preparation works shall include:
- i. Removal of artificial building structures, such as storage structures, paved footpaths, fencing etc.
 - ii. Removal of invasive plants commonly seen in these habitats, such as *Mikania micrantha* and *Leucaena leucocephala* identified in the ecological baseline study.
 - iii. Removal of exotic ornamentals which have no ecological function to the proposed WEPA, such as *Araucaria heterophylla* and *Delonix regia* identified in the ecological baseline study.
- 3.1.4 Fruit trees of good health are recommended to be retained as part of the future WEPA, since they can be utilised by the native fauna as food plants and are also common components e.g. *Dimocarpus longan*, in local secondary woodlands as well as *fung shui* woods. A tree survey prior to site preparation is recommended to work out an updated tree inventory to allow selection of suitable trees to be retained in the WEPA.

4 Planting Schedule

- 4.1.1 Planting will comprise native species conducive to the local ecology and were selected based on the ecological baseline study of the EIA and their ecological values for the area (exotic dominant plant species in the affected W3 are therefore not recommended due to their anticipated low ecological contribution to the WEPA).
- 4.1.2 Recommended native floral species to be adopted are listed below:

Table 4.1 – Recommended Native Floral Species

Species	Origin	Recommended Proportion (%) #
<i>Acronychia pedunculata</i>	Native	5
<i>Aporosa dioica</i>	Native	8
<i>Aquilaria sinensis</i>	Native *	2
<i>Bridelia tomentosa</i>	Native	5
<i>Celtis sinensis</i>	Native	5

Species	Origin	Recommended Proportion (%) #
<i>Cinnamomum camphora</i>	Native	8
<i>Cratoxylum cochinchinense</i>	Native	8
<i>Endospermum chinense</i>	Native	2
<i>Garcinia oblongifolia</i>	Native	5
<i>Machilus chekiangensis</i>	Native	5
<i>Machilus velutina</i>	Native	5
<i>Mallotus paniculatus</i>	Native	8
<i>Pyrenaria spectabilis</i>	Native *	2
<i>Microcos nervosa</i>	Native	5
<i>Sapium discolor</i>	Native	3
<i>Schefflera heptaphylla</i>	Native	8
<i>Schima superba</i>	Native	8
<i>Sterculia lanceolata</i>	Native	8

Note: * species of conservation interest identified in the EIA with available stocks for compensatory planting from the market

according to the total size (1.2ha) of the WEPA, it would require about 1,000 trees. Lower proportion given to the two species of conservation interest is owing to the consideration of lack of large available quantity from the market at the same year. This consideration is also applicable to the *fung shui* wood restricted species *Endospermum chinense*.

- 4.1.3 Light standard trees are proposed for planting for their faster growing than the larger sized stocks such as standard or heavy standard size due to their stronger vigor in adapting planting practice. The trees will be planted at 3m spacing in staggered pattern, which is referenced to the average spacing of plants in the adjacent woodlands W1-W3.
- 4.1.4 However, it should be noted that the proposed plant list and recommended initial planting size shall be further reviewed and updated prior to the actual commencement of the planting works as checking the supply of the species and the size of stock is required at that year of implementation.
- 4.1.5 The specifications for pre-planting and planting works shall follow the General Specification for Civil Engineering Works (2006) *Section 3 – Landscape Softworks and Establishment Works*. Relevant clauses are given in Annex A.
- 5 Planting Management**
- 5.1.1 The proposed planting management will include establishment softworks and their inspection which aim to ensure the planting performance. Establishment softworks shall include basically replacement of dead plants, weeding and watering.
- 5.1.2 The specifications for standard practices of inspection and establishment works will follow the General Specification for Civil Engineering Works (2006) *Section 3 – Landscape Softworks and Establishment Works* (Annex A).
- 6 Ecological Monitoring**
- 6.1.1 To ensure the establishment of the WEPA, a 3-year ecological monitoring is proposed, apart from the standard practices and site inspections regularly conducted by the landscape contractors stated in Section 5 above.
- 6.1.2 Ecological monitoring is proposed to be carried out in inspection walk and quadrats. Monitoring in inspection walk aims to observe the overview / progress of the planting of the WEPA; while monitoring in quadrats aims to collect quantitative information.

- 6.1.3 The monitoring shall be supervised by a qualified botanist/ecologist (Project Botanist/Ecologist) who will work as a member of Environmental Team (ET). The Project Botanist/Ecologist will oversee the implementation of the woodland enhancement planting works.
- 6.1.4 As the monitoring conducted through inspection walk aims to observe the overview and general condition of the WEPA, the routes of general inspection walk should be selected to cover representative areas of the WEPA as far as possible. The general health condition (good/fair/poor/dead) and survival (%) of the planted trees will be recorded by direct observation.
- 6.1.5 A total of 6 quadrats of size 20mx20m are recommended for the monitoring. Parameters to be measured within quadrats include health condition (good/fair/poor/dead), and survival rate (%) of all the planted trees.
- 6.1.6 The frequency of the monitoring is proposed to be bi-monthly during the first year and afterwards could be reduced to quarterly. Change of monitoring frequency shall be advised by the Project Ecologist/Botanist and agreed with Agriculture, Fisheries and Conservation Department (AFCD) before the implementation.
- 6.1.7 The Trigger and Action Levels for monitoring and Action Plan of the WEPA are presented in the following Table:

Table 6.1 – Trigger and Action Levels for Monitoring and Action Plan of WEPA

Parameters	Trigger and Action Level	Action Plan
General Health Condition	Trigger Level: % of plants in poor health condition >20%	<ul style="list-style-type: none"> the ET should inform Contractor and IEC immediately; identify the cause(s) of the exceedance; advise Contractor the necessity of replanting.
	Action Level: % of plants in poor health condition >30%	<ul style="list-style-type: none"> the ET should inform Contractor and IEC immediately; identify the cause(s) of the exceedance; advise remedial action and work out solution including change of species in re-planting, re-soiling of the target areas; and seek acceptance from AFCD; Once the remedial action has been accepted by AFCD, the Contractor should implement the remedial action.
Survival of Plants	Trigger Level: Survival rate of plants < 80%	<ul style="list-style-type: none"> the ET should inform Contractor and IEC immediately; identify the cause(s) of the exceedance; advise Contractor the necessity of replanting.
	Action Level: Survival rate of plants < 70%	<ul style="list-style-type: none"> the ET should inform Contractor and IEC immediately; identify the cause(s) of the exceedance; advise remedial action and work out solution including change of species in re-planting, re-soiling of the target areas; and seek acceptance from AFCD; Once the remedial action has been accepted by AFCD, the Contractor should implement the remedial action.

7 Reporting

- 7.1.1 The monitoring findings, site observations and recommendations on woodland enhancement planting management shall be reported in periodic EM&A reports. Agriculture, Fisheries and Conservation Department shall be included in the circulation list of the EM&A reports for comments.

8 Implementation and Maintenance Arrangement

- 8.1.1 As the WEPA is proposed outside the construction works footprint, the implementation of the WEPA can start once the Project commences and not necessary to wait the completion of the civil works of the project. This has an advantage of shorter time lag between the occurrence of the ecological impact and establishment of the mitigation measure.
- 8.1.2 The management and maintenance arrangement of the WEPA will be regulated by the Environment, Transport and Works Bureau Technical Circular (Works) No. 2/2004 – Maintenance of Vegetation and Hard Landscape Features. The pre-planting (such as construction and site preparation), planting and the subsequent establishment works will be provided by the Project Proponent (CEDD) via their contractor. According to the technical circular, AFCD will then take over (upon AFCD's acceptance on the completion of the CLW) and maintain the ecological planting as recommended by EIA till the vegetation is fully established.

END OF TEXT