

12 Landscape and Visual Impact Assessment

12.1 Introduction

This section reports on the study to assess the potential landscape and visual impacts arising from construction and operation of any above ground structures and works areas associated with NDAs within the KTN and FLN areas.

The Project is a Schedule 3 Designated Project (DP) and various Schedule 2 DPs have been identified within it. The identified DPs are listed in **Section 12.3.1** and ‘**DP Packages 12A-D**’ provide further details for each.

In accordance with the criteria as stated in Annexes 10 and 18 of the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM), the landscape and visual impact assessment (LVIA) for the Schedule 3 NDA Project includes:

- a list of the relevant environmental legislation, standards and guidelines;
- a definition of the scope and contents of the Study;
- a review of the relevant planning and development control framework;
- a landscape impact assessment section, including:
 - landscape impact assessment methodology;
 - a landscape baseline study providing a comprehensive and accurate description of the baseline landscape resources (LRs) and landscape character areas (LCAs) within the two NDA Study Areas;
 - identification of potential landscape impacts (these are similar to the potential visual impacts and hence all potential landscape and visual impacts are contained within one section);
 - prediction of the nature of landscape impacts and the potential magnitude of change they will cause as well as the potential significance of impacts before the implementation of mitigation measures;
 - recommendation of appropriate mitigation measures and associated implementation programmes;
 - prediction of the significance of residual landscape impacts after the implementation of the suggested mitigation measures;
- a visual impact assessment section, including:
 - visual impact assessment methodology;
 - a visual baseline study, providing comprehensive details of visual elements surrounding each NDA and their Visually Sensitive Receivers (VSRs);

- prediction of the nature of visual impacts and the potential magnitude of change they will cause, as well as the potential significance of impacts before the implementation of mitigation measures;
- recommendation of appropriate mitigation measures and associated implementation programmes;
- prediction of the significance of residual visual impacts after implementation of the suggested mitigation measures; and
- an assessment of the acceptability or otherwise of the predicted residual impacts, according to the five criteria set out in Annex 10 of the EIAO-TM, namely beneficial, acceptable, acceptable with mitigation measures, unacceptable or undetermined.

12.2 Environmental Legislation, Standards and Guidelines

The following legislation, standards and guidelines are applicable to this LVIA associated with the construction and operation of the Project:

- Environmental Impact Assessment Ordinance (Cap. 499. S16) and the Technical Memorandum on EIA Process (EIAO-TM), particularly Annexes 10 (Criteria for Evaluating Visual and Landscape Impact, and Impact on Sites of Cultural Heritage) and 18 (Guidelines for Landscape and Visual Impact Assessment);
- Environmental Impact Assessment Ordinance Guidance Note 8/2010 (Preparation of Landscape and Visual Impact Assessment under the Environmental Impact Assessment Ordinance);
- Town Planning Ordinance (Cap131) and Town Planning (Amendment) Ordinance;
- Hong Kong Planning Standards and Guidelines (HKPSG) issued by the Planning Department, in particular Chapters 4, 10, 11 and Section 7 in Chapter 12 (As at August 2011);
- Land Administration Office Instruction (LAOI) Section D-12 Tree Preservation;
- Development Bureau TCW No. 2/2012 – Allocation of Space for Quality Greening on Roads;
- Development Bureau TCW No. 3/2012 – Site Coverage of Greenery for Government Building Projects;
- Development Bureau, Greening, Landscape and Tree Management Section (GLTM) April 2012 – Guidelines on Greening of Noise Barriers;
- Development Bureau TCW No. 2/2013 – Greening on Footbridges and Flyovers;

- Drainage Services Department Practice Note No.1/2005 – Guidelines on Environmental Considerations for River Channel Design;
- ETWB TCW No. 2/2004 – Maintenance of Vegetation and Hard Landscape Features;
- ETWB TCW No. 11/2004 – Cyber Manual for Greening;
- ETWB TCW No. 29/2004 – Registration of Old and Valuable Trees, and Guidelines for their Preservation;
- ETWB TCW No. 36/2004 – The Advisory Committee on the Appearance of Bridges and Associated Structures (ACABAS), including Appendix A ‘Guidelines for Submissions to ACABAS;’
- ETWB TCW No. 5/2005 – Protection of Natural Streams/Rivers from Adverse Impacts Arising from Construction Works;
- ETWB TCW No. 3/2006 – Tree Preservation;
- HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit;
- HQ/GN/15 - Guidelines for Greening Works along Highways;
- Urban Design Guidelines for Hong Kong issued by the Planning Department (2003);
- Study on Landscape Value Mapping of Hong Kong⁽¹⁾;
- WBTC No. 25/92 – Allocation of Space for Urban Street Trees;
- WBTC No. 7/2002 – Tree Planting in Public Works;
- GEO publication (1999) – Use of Vegetation as Surface Protection on Slopes; and
- GEO 1/2011 – Technical Guidelines on Landscaping Treatment for Slopes.

12.3 Scope of the Study

The Study Area, as shown in aerial photographs in **Figures 12.0.0 to 12.0.2.2**, is located at the northeastern part of the New Territories.

KTN NDA is located to the west of Sheung Shui and is generally bound by the Shek Sheung River to the east, Castle Peak Road and the Fanling Highway to the south, Pak Shek Au and Tit Hang villages to the west and the present Closed Area Boundary to the north. KTN NDA has an area of approximately 450ha.

FLN NDA is located immediately to the northeast of the established Fanling / Sheung Shui urban area and is bound by the Upper Ng Tung River to the north and east, Sha Tau Kok Road to the south, and Ma Sik

⁽¹⁾ PlanD. *Landscape Value Mapping of Hong Kong Final Report*. Available at: http://www.pland.gov.hk/pland_en/p_study/prog_s/landscape/landscape_final/index.html [Accessed 6 February 2013]

Road and Tin Ping Road to the southwest. FLN NDA has an area of approximately 164ha.

12.3.1 Designated Projects Under Schedule 2 within NDA Project

The Project is a Designated Project under Item 1 of Schedule 3 of the EIAO. In addition, the Project includes various Schedule 2 DPs as summarised in **Table 12.3.1** for KTN area and **Table 12.3.2** for FLN area. Further details of each of the DPs and their LVIA's are found in **DP Packages 12A-D**.

Table 12.3.1 - Schedule 2 DPs in, and associated with, KTN NDA

Item	Work Component		Schedule 2 DP Category	Associated Schedule 2 DP Package
1	San Tin Highway and Fanling Highway Kwu Tung Section Widening (between San Tin Interchange and Po Shek Wu Interchange) (Major Improvement)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road	12A
2	Castle Peak Road (CPR) Diversion (Major Improvement)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.	12A
3	KTN NDA Road P1 and P2 (New Road) and associated new Kwu Tung Interchange (New Road) and Pak Shek Au Interchange Improvement (Major Improvement)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.	12A
4	KTN NDA Road D1 to D5 (New Road)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.	12A

Item	Work Component		Schedule 2 DP Category	Associated Schedule 2 DP Package
5	New Sewage Pumping Stations (SPSs) in KTN NDA	F3	A SPS---(b) with an installed capacity of more than 2,000 m ³ per day and a boundary of which is less than 150 m from an existing or planned residential area or educational institution.	12B
6	Proposed railway station and associated facilities in KTN NDA (To be conducted under separate study)	A2	A railway and its associated stations.	EIA to be conducted under separate study
7*	Utilization of Treated Sewage Effluent (TSE) from Shek Wu Hui Sewage Treatment Works (SWHSTW)	F4	An activity for the reuse of treated sewage effluent from a treatment plant.	12C

*Work component serves both KTN and FLN NDAs.

Table 12.3.2 - Schedule 2 DPs in, and associated with, FLN NDA

Item	Work Component		Schedule 2 DP Category	Associated Schedule 2 DP Package
7*	Utilization of TSE from SWHSTW	F4	An activity for the reuse of treated sewage effluent from a treatment plant.	12C
8	Po Shek Wu Interchange Improvement (Major Improvement)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.	12D
9	Fanling Bypass Western Section (New Road)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.	12D
10	Fanling Bypass Eastern Section (New Road)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.	12D

Item	Work Component		Schedule 2 DP Category	Associated Schedule 2 DP Package
11	Shek Wu Hui Sewage Treatment Works - Further Expansion at FLN NDA	F1	Sewage treatment works with an installed capacity of more than 15,000 m ³ per day.	12C
12	Reprovision of temporary wholesale market in FLN NDA	N3	A wholesale market.	12D
13	New Sewage Pumping Stations (SPSs) in FLN NDA	F3	A sewage pumping station--- (b) with an installed capacity of more than 2,000 m ³ per day and a boundary of which is less than 150 m from an existing or planned residential area or educational institution.	12C

*Work component serves both KTN and FLN NDAs.

12.3.2 Concurrent Projects

Chapter 2 of the EIA Report evaluates the potential concurrent projects, as shown in **Table 2.12**, with **Figures 2.21 and 2.22** illustrating their locations. The evaluation provided in **Chapter 2** concludes that four of these projects should be assessed for cumulative impacts, as listed below.

Agreement No. CE42/2006(TP) Planning Study on Liantang/Heung Yuen Wai Cross-boundary Control Point and its Associated Connecting Roads in Hong Kong – Feasibility Study

A new Boundary Control Point (BCP) is proposed to be constructed at Heung Yuen Wai. The associated connecting road is within the 500m study boundary of Fanling Bypass, considered a Schedule 2 DP. Cumulative landscape and visual impacts have therefore been assessed for both construction and operational phases in **DP Package 12D** for this LVIA.

Agreement No. CE53/2008(CE) Planning and Engineering Study on Development of Lok Ma Chau Loop – Investigation

The Development of the LMC Loop comprises the buildings, landscape and supporting infrastructure within and adjacent to the site. The eastern connection road lies within the study area of KTN NDA. Since the construction programme for the Project is likely to be concurrent with the Development of LMC Loop, cumulative landscape and visual impacts have been assessed for both construction and operational phases in **Section 12.13.4**.

Widening of Tolo Highway/ Fanling Highway between Island House Interchange and Fanling (Stage 2)

The project comprises (1) widening of a section of Fanling Highway of approximately 3 km long between Tai Hang and Wo Hop Shek Interchange from dual three-lane to dual four-lane carriageway; and (2) widening of the southbound slip road at Wo Hop Shek Interchange. The tentative completion date of the project is from Year 2015 to Year 2018 but is still under review by the Highways Department. This project intersects with the Fanling Bypass, considered a Schedule 2 DP. Cumulative landscape and visual impacts have therefore been assessed for both construction and operational phases in **DP Package 12D** for this LVIA.

Construction of cycle tracks and the associated supporting facilities from Sha Po Tsuen to Shek Sheung River

This project (the EIAO DP portion) is for the Priority Phase of the proposed Cycle Track Network recommended in the Feasibility Study. According to discussions with CEDD, the construction period is Year 2014 - 2017. Cumulative landscape and visual impacts have therefore been assessed in **Section 12.13.4**.

12.4 Landscape Impact Assessment Methodology

According to the Study Brief (ESB-176/2008) requirement, the Study Area for the landscape impact assessment shall include all areas within 500 m from each NDA site boundary as described in **Section 12.3** and indicated in the aerial photograph of the whole Study Area in **Figure 12.0.0**. **Figures 12.0.1 and 12.0.2.1-2** are close up aerial photographs of KTN and FLN NDA Study Areas respectively.

Firstly a baseline study has been conducted within the NDA Study Area, followed by an impact assessment, and each step is described below.

12.4.1 Baseline Study

- Identification of the baseline LR and LCAs found within the 500 m Study Area has been achieved by site visits and desktop study of topographical maps, information databases and photographs. LR types are mapped based on their principal physical landscape and visual characteristics which link them together, rather than their habitat function; for example wet and dry agricultural land and active and abandoned agricultural land are considered as a single LR. In mapping these resources, contiguous areas of the LR types are identified which may not always match ecological habitat maps. **Figures 12.5.0 and 12.6.0** show key plans for baseline LR in KTN and FLN respectively, with zoom-ins shown in **Figures 12.5.1-8 and 12.6.1-7**. LCAs are broader categorizations than LR, and each one encompasses a number of different LR. **Figures 12.7.0 and 12.8.0** show key plans for baseline LCAs in KTN and FLN NDAs respectively, with zoom-ins shown in **Figures 12.7.1-8 and 12.8.1-7**.

- Broad-brush tree survey. Identification of the tree species⁽²⁾, and approximate proportion of the different tree species, noting dominant species, as well as maturity and rarity of species (including species of conservation interest) within LR and LCAs in the Study Areas, with special focus within the NDA boundaries.
- Assessment of the sensitivity of LR and LCAs. This is influenced by a number of factors including the following.
 - Quality and maturity, condition and value of landscape resources / character areas, taking into account information from the Broad Brush Tree Survey and general quality, maturity and condition of other types of vegetation. (Ranked as high, medium or low)
 - Important / rarity of landscape resources / character areas. (Ranked as high, medium or low)
 - Whether a landscape resource / character area is considered to be of local, regional, national or global importance. (Taken into account and included in the descriptive text where relevant)
 - Whether there are any statutory or regulatory limitations / requirements relating to the landscape resources / character areas. (Taken into account and included in the descriptive text where relevant)
 - Ability of the landscape resources / character areas to accommodate change without compromising their essential nature. (Ranked high, medium or low)

The sensitivity of each LR and LCA is based on the values of all the above factors in totality and classified as follows:

- High:** Important landscape or landscape resources of particularly distinctive character of high importance, sensitive to relatively small changes
- Medium:** Landscape or landscape resources of moderately valued landscape characteristics reasonably to tolerant to change
- Low:** Landscape or landscape resources of relatively unimportant landscape characteristics largely tolerant to change

12.4.2 Landscape Impact Assessment

Landscape impacts have been assessed for the construction and operational phases of the Project in each of the two NDA Study Areas as follows.

- Identification of potential sources of landscape impacts. There are various construction works elements and operational procedures that have the potential to generate landscape impacts.

⁽²⁾ A plant is considered as a tree if its diameter at breast height (DBH) is 95mm or more (or girth [circumference of the trunk] measures 300 mm or more). 'Breast height' is standardised at a height of 1300 mm above ground level in Hong Kong according to *ETWB TCW No. 3/2006 on Tree Preservation*.

- Rating of the magnitude of change caused by landscape impacts. The magnitude of change caused by the landscape impact is quantified as far as possible and depends on a number of factors including the following:
 - The physical extent of the impact. This is assessed using a number of factors, including: absolute area/length within the NDA Project Site; relative area/length with the NDA Site compared to the Study Area; and the current land use compared to the proposed land use i.e. taking into account some land, even though within the NDA Project Site, will not be directly impacted e.g. land zoned as “Green Belt” will remain unchanged. (Ranked as small, medium or large)
 - Compatibility of the Project and associated works with the existing and planned landscape in the vicinity. (Ranked as good, fair or poor)
 - Duration of impacts i.e. whether it is temporary (short or medium term) or permanent, under construction and operational phases
 - Reversibility of change (ranked as reversible or irreversible)

The magnitude of landscape change on each LR/LCA is based on the values of all the above factors in totality and classified as follows:

- Large:** The LRs or LCAs would suffer a major change
- Intermediate:** The LRs or LCAs would suffer moderate change
- Small:** The LRs or LCAs would suffer slight or barely perceptible change
- Negligible:** The LRs or LCAs would suffer no discernible change

- Prediction of landscape impact significance before and after the implementation of the mitigation measures. By understanding the magnitude of change caused by the various impacts and the sensitivity of the various LRs/ LCAs, it is possible to categorize impacts in a logical, well-reasoned and consistent fashion. **Table 12.4.1** shows the rationale for dividing the degree of significance into four thresholds, namely insignificant, slight, moderate, and substantial, depending on the combination of a negligible-small-intermediate-large magnitude of change and a low-medium-high degree of sensitivity of LR/ LCA.

Table 12.4.1 - Relationship between receptor sensitivity and magnitude of change in defining impact significance

		Receptor Sensitivity of LR/LCA		
		Low	Medium	High
Magnitude of Change	Negligible	Insignificant	Insignificant	Insignificant
	Small	Slight	Slight/ Moderate	Moderate
	Intermediate	Slight/ Moderate	Moderate	Moderate/ Substantial
	Large	Moderate	Moderate/ Substantial	Substantial

The four thresholds for the degree of significance are explained below. All impacts are assumed to be adverse in the text of the Report, unless specifically identified otherwise.

- Substantial:** Adverse / beneficial impact where the proposed NDA Project will cause significant deterioration or improvement in existing landscape quality
- Moderate:** Adverse / beneficial impact where the proposed NDA Project will cause a noticeable deterioration or improvement in existing landscape quality
- Slight:** Adverse / beneficial impact where the proposed NDA Project will cause barely perceptible deterioration or improvement in existing landscape quality
- Insignificant:** No discernible change in the existing landscape quality

Impacts have been mapped for the LRs in **Figure 12.11.0** (key plan) and **Figures 12.11.1-4** (zoom ins) for KTN NDA, and **Figure 12.12.0** (key plan) and **Figures-12.12.1-4** (zoom ins) for FLN NDA. **Figures 12.9.0 and 12.10.0.1-2** show the revised RODP for KTN NDA and FLN NDA respectively and **Figures 12.9.1-2 and 12.10.1-2** give details of the Development Parameters of KTN NDA and FLN NDA RODPs respectively.

Impact for LCAs have been mapped in **Figures 12.13.0** (key plan) and **Figures 12.13.1-4** (zoom ins) for KTN NDA, and **Figure 12.14.0** (key plan) and **Figures 12.14.1-4** (zoom ins) for FLN NDA.

- Potential landscape mitigation measures have been identified with a view to reduce landscape impacts to acceptable levels during design, construction and operation of the Project and associated works. The proposed mitigation measures are not only concerned with damage reduction but will also include consideration of preservation to avoid disturbance to LRs and LCAs and potential enhancement of existing landscape (and visual) quality. Mitigation measures may take the form of:
 - Adopting alternative design or revising the basic engineering and / or architectural design, to prevent and / or minimize adverse

impacts. Alternative alignment(s), design(s) and construction methods that avoid or reduce the identified landscape impacts have been evaluated for comparison before adopting other mitigation or compensatory measures to alleviate the impacts

- Remedial measures such as colour and textural treatment of physical, engineering and building features and green roofing
- Compensatory measures such as the implementation of landscape design measures (e.g. tree planting, creation of new open space etc.) to compensate for unavoidable adverse impacts and to attempt to generate potentially beneficial long-term impacts

To ensure their effectiveness throughout the construction and operational phases of the Project and associated works, the relevant responsible parties for the on-going management and maintenance of the proposed mitigation measures have been identified. Approval-in-principle to the funding, implementation, management and maintenance of the proposed mitigation measures is being sought from the appropriate authorities, according to the principles in *ETWB TCW No. 2/2004*.

- Prediction of Acceptability of Impacts. An overall assessment of the acceptability, or otherwise, of the impacts in accordance with the five criteria set out in Annex 10 of the EIAO-TM is given, considering the guidelines in paragraph 3.11 of *Environmental Impact Assessment Ordinance Guidance Note No. 8/2010*.

12.5 Review of Planning and Development Control Framework

This section provides an overview of the HKSAR Government's development intentions, statutory land-use and planning within the Study Areas, specifically from landscape and visual standpoints, and also discusses the overall development principles and concepts considered during the design of the revised RODPs. Relevant, published studies, such as HK2030 Study are reviewed before detailing how the design of the revised RODPs has affected landscape and visual impacts. The existing Outline Zoning Plans (OZPs), and Development Permission Area (DPA) Plans are then considered in relation to the relevant revised RODP of the NDAs and their Layout Plans, with the aim of assessing whether the Project can fit into the surrounding setting.

12.5.1 The Hong Kong 2030: Planning Vision and Strategy

HK2030 Study was tasked to update the Territorial Development Strategy for Hong Kong recommending, on the basis of a series of assumptions, how the spatial environment should respond to various social, economic and environmental needs in the next 20 to 30 years, taking Hong Kong towards a shared vision.

The HK2030 Study proposed a number of recommendations including improvement of the degraded rural environment, better protection of resources of high conservation value, and particularly that the NDAs (i.e. NENT NDAs⁽³⁾ and Hung Shui Kiu NDA) could be an important source of housing land. Based on the HK2030 Study, the residential population target would be 0.35 million within NENT NDAs and Hung Shui Kiu NDA. They would be served by rail and highly accessible through the development of new rail stations. The NDAs proposed in the HK2030 Study are contiguous to existing developed areas such that they would be more cost effective in the provision of infrastructure. Some of the existing government, institutions or community facilities could also be shared between the currently developed areas and the NDAs. In addition, the NDAs would have the potential to provide additional employment opportunities for new town dwellers.

It is considered that the current proposed NDA developments (KTN and FLN NDAs only) and associated works are in principle following the concept of HK2030 Study and further details regarding the design of the revised RODPs are given in **Section 12.5.2**, particularly with respect to landscape and visual considerations.

12.5.2 Revised RODP Design to Minimize Landscape & Visual Impacts

The revised RODPs set out the proposed land use framework to guide future development of the KTN and FLN NDAs in terms of spatial land use arrangements, development intensities and heights, major infrastructural networks, open space and visual corridors/networks, etc. and therefore play a key part in directing the potential landscape and visual (L&V) impacts of the Project. They have undergone a number of iterations and substantial changes since the HK2030 Study concept and the NENT Study was completed in 2003, taking into account the findings and recommendations of various technical assessments such as engineering, land, traffic and environment, etc. The text below summarises the relevant planning principles and concepts that have been incorporated into the revised RODPs, particularly highlighting those that mitigate the potential landscape and visual impacts of the Project.

12.5.2.1 Overall Development Principles and Concepts

Each NDA has been planned to achieve the distinct landscape characteristic of a new town; considering the KTN NDA is served by the Fanling Highway and Lok Ma Chau (LMC) Spur Line and its strategic proximity to Lo Wu BCP, LMC BCP, and the proposed LMC Loop, it has been planned as a 'mixed development node' with a town centre based around the proposed railway station and focused on transit oriented

³ NENT NDAs comprise KTN NDA, FLN NDA and Ping Che/Ta Kwu Ling NDA. The latter will be put aside and re-planned in the context of the policy initiative announced in the 2013-14 Policy Address to further explore the development potential in New Territories North in order to optimize the use of valuable land resources, taking into account the strategic planning considerations.

development. FLN NDA on the other hand has been planned as a 'riverside community' with Ng Tung River serving as the key linkage in the NDA with pedestrian and cycle track systems and the open space corridor and mixed residential and commercial development. Both FLN NDA and KTN NDA are planned to be the extensions of the existing Fanling/Sheung Shui new town to form the FL/SS/KTN New Town.

Care has been taken to preserve major landscape assets such as Tai Shek Mo, Wa Shan and Cham Shan uplands, Fung Kong Shan and limit development in Long Valley, thus avoiding L&V impacts. Similar priority has been given to establishing a network of linked open spaces, accommodating a number of parks, plazas, squares, green amenity strips and landscape corridors, to create 'green' new towns and partly compensate for any loss of such existing open spaces or other relevant LRs.

During public consultations, people were noted to be concerned about the L&V impacts of the elevated road infrastructures and noise barriers specifically. Some people also suggested maximizing the greening opportunities. The revised RODPs therefore aim to minimize areas needing noise barriers and maximize greening opportunities.

Site formation has also been carefully considered to minimize works and L&V impact, by keeping all the proposed developments and infrastructures as close to the existing ground profile as possible and achieving the best cut/ fill balance for each development stage of the NDAs. For low-lying areas drainage has also been taken into account and filled to above 1-in-200-year flood levels. Where there is a need for site formation to significantly cut into existing landscape, the use of retaining walls has been preferred. Retaining walls reduce the extent of land affected (thereby reducing direct landscape impact) and avoid formation of extensive and unsightly cut slopes, although the visual impact of retaining walls themselves has also been taken into account and addressed..

Details of specific principles adopted when formulating the revised RODP for each NDA are provided below, focusing on those that particularly affect L&V impacts.

12.5.2.2 KTN NDA Planning Principles and Concepts

Key principles adopted when formulating the KTN NDA revised RODP and which avoid, reduce or compensate for potential L&V impacts, are detailed below, and **Figures 12.9.3 to 12.9.5** in combination help illustrate them.

Layout Design Respecting the Surrounding Environment and Ecology

To respect the rural character in the surrounding areas, a stepped building height profile is adopted in designing the NDA which helps to increase visual interest and give a more visually amenable appearance. The high density developments will be concentrated around the proposed Kwu Tung Railway Station. The building density and heights drop

gradually towards the periphery of the NDA to ensure a better integration between the NDA developments and the adjacent rural setting.

Additionally site coverage restrictions have been considered and adopted in the allocation of land uses in order to respect and integrate with the local context and development, and also to reduce potential visual impacts in particular. The building mass is controlled by the proposed maximum site coverage, with the site coverage for CDA sites for example restricted at 65% to avoid excessive building bulk, allow space for greening and improve visual amenity.

Due consideration is also given to Long Valley as outlined in the paragraphs below.

Incorporation of Key Natural and Landscape Features into NDA Development, including creation of Long Valley Nature Park

A key planning principle is to preserve and enhance the significant landscape character areas and landscape resources in the NDA, thus avoiding landscape (as well as visual) impacts. Due respect has been paid to the existing landscape features such as Fung Shui woodlands, which are of high social importance. Development/encroachment within Fung Shui woodlands should be avoided. The existing Fung Shui Woodland adjacent to Ho Sheung Heung is integrated into the land use framework through its designation as “Green Belt” zone and the five registered OVTs within the NDA boundary, located along Castle Peak Road/ Fanling Highway, are proposed to be retained. In addition, Fung Kong Shan and the hill to its east have been designated as “Green Belt” zone and a large area to the west of the NDA, incorporating the foothills of the Western Ranges, is another Green Belt designated area.

With respect to the habitat of Long Valley, the urban type developments within this NDA are located away from the core area of Long Valley, where ecologically important habitats are present. Direct impacts to the core area or areas immediately adjacent to this core area have been avoided by designating the core area of Long Valley as “Other Specified Uses (Nature Park)” zone to create the Long Valley Nature Park (LVNP), which will be actively managed by the Government, and designating those areas immediately adjacent as ‘AGR’ zone to retain their use. This is a key avoidance mitigation measure to reduce overall impact on agricultural landscape due to the Project, and partially compensate for any unavoidable marsh/ wetland loss (See **Section 12.9**, MM13 for further details and also **Section 12.5.3.1** for further details of the treatment of Long Valley).

In addition, existing trees have been retained as far as possible throughout the NDA, to avoid the loss of landscape resources and greening.

Creating a Comprehensive Green Network

Fung Kong Shan Park is proposed to be designed as a green park featuring a major artificial lake with water running off from Fung Kong

Shan. The park could exemplify the green vision of the NDA. Additionally the riverside promenade along the western side of Sheung Yue River also serves as an important riverside open space with good views to the green LVNP on the opposite bank of the river. The Town Park stretching from west to east linking up Pak Shek Au and Long Valley also provides spaces for recreational and social activities and the north-south open space corridors linking Kwu Tung South with Fung Kong Shan Park will be landscaped and form part of the comprehensive green network. This green network serves as a physical linkage between major residential areas and major activity nodes (such as Kwu Tung Railway Station, Town Park, LVNP and Fung Kong Shan Park) and could enhance the overall landscape character of the area.

Creating Visual Connections and Breezeways

The major east-west green corridor (Site A1-10) connecting Long Valley to Pak Shek Au provides a key visual corridor and breezeway for the NDA. The north-south corridors (including through Sites B2-9, B2-13 and A3-3) also provide direct visual linkage from the southern part of the NDA to the hilly backdrop in the north and give a sense of space. Another view corridor is also provided in a northwest-southeast direction in the form of the eastern periphery road, providing a distant view to Fung Kong Shan. A continuous open view from Long Valley to the hills in the north is also preserved. The positions of the building blocks have also been designed to maintain view corridors and designations of building separation as well as building set back are considered to avoid wall-like buildings and achieve better visual permeability.

Public Open Space System

Apart from the major public open spaces of the east-west running Town Park in the town centre; the Fung Kong Shan Park in the northern part of the NDA and the riverside promenade along the western side of Sheung Yue River, a secondary green loop offering a continuous open space framework connecting all the residential neighbourhoods, in both east-west and north-south direction, is also provided to promote a safe and comfortable walking environment within the NDA. These public open spaces could be designed to create central squares, gardens, children's playgrounds or parks. The public open space system will enhance the visual amenity of the area and improve the overall landscape character.

Buffer Areas

Amenity areas have been carefully planned to provide buffers between major roads and proposed developments to mitigate potential environmental impacts, including visual impacts. They offer good opportunities for landscaping and tree planting and may screen views of roads and generally enhance their landscape and visual amenity.

Preservation of Cultural and Heritage Resources

The declared monuments and graded historic buildings have been considered and incorporated in the NDA development.

Other planning principles less directly affecting L&V impacts of the KTN NDA include:

Minimising Impacts on Existing Communities - In the revised RODP, attempts have been made to minimize disturbance to the existing community which may have implications on landscape impacts. Two burial grounds are located on the hillside slopes immediately west of Ho Sheung Heung and near Tit Hang, on the northern and western fringes of the NDA. No developments encroach on these areas. Developments in the close vicinity are compatible with the rural setting.

Sufficient Government, Institution and Community Facilities - Some of the existing G/IC facilities within the NDA will be retained thus reducing the land required to provide additional G/IC facilities.

Promoting a Sustainable Living Environment through Transit-Oriented Development (TOD) – The majority of the NDA's developments and population will be located within a 500 m catchment area of the proposed Railway Station and the population will therefore be concentrated in this area rather than expanding further afield and the natural area at the periphery of the NDAs can be preserved.

Reserving Land to Support Economic Growth of Hong Kong - The existing infrastructure has been considered, particularly Fanling Highway and the proposed Railway Station, with a cluster of "Commercial, Research and Development" sites located within easy access.

Balanced Community Mix - A range of housing types must be accommodated to cater for different housing needs.

Incorporation of Environmentally 'Green' Features – Planning also considers the provision of a District Cooling System (DCS) for non-domestic developments, passive building design, water saving fixtures, reuses of treated sewage effluent (TSE) for non-portable purposes such as landscape irrigation, etc.. The revised RODP allows for subsequent implementation of road-based EFTM e.g. charging stations for electric vehicles.

12.5.2.3 FLN NDA Planning Principles and Concepts

Key principles adopted when formulating the FLN NDA revised RODP and which avoid, reduce or compensate for potential L&V impacts, are detailed below, and **Figures 12.10.3 -5** in combination help illustrate them.

Compatibility with the Surrounding Environmental and Development Characters

In FLN NDA, high buildings with the highest density are concentrated within the two core areas on the southern bank of Ng Tung River to minimize urban sprawl and an area between the two core areas is reserved for a Central Park and low-rise buildings for various recreation, social and community facilities to provide some relief between the two core concentrated development areas. In addition, the intensity and

building heights drop gradually towards the periphery and Ng Tung River to help maximize views to this natural feature and the hills behind, increase visual interest through the stepped building height profile and overall give the NDA a more visually amenable appearance.

With respect to development characters, FLN NDA (and KTN NDA) will extend to the existing Fanling/Sheung Shui new town to form the FL/SS/KTN New Town, with residents sharing the existing and the planned community facilities. FLN NDA will therefore be compatible with the surrounding development, extending the existing urban area.

In addition, the existing Sheung Shui Water Treatment Works (WTW) has a 'Consultation Zone' and 'Influence Zone' of 1km and 2km radius respectively. These have been considered during development of the RODP in view of the potential hazards within these areas. Therefore residential developments will not be planned within the Consultation Zone, while residential developments of relatively lower intensities are planned in the Influence Zone and sensitive uses such as schools will be located as far as possible from the Influence Zone. In sum, the amount of residential development and working opportunities within these zones has been carefully controlled.

Incorporation of Key Natural and Landscape Features into NDA Development

FLN NDA occupies the flat land between the existing new town and surrounding hill slopes and village developments. The outer limit to the new town is clearly delineated by the retrained Ng Tung River and the proposed major road.

To help preserve the green aspect in north-western part of the NDA, Sites A1-3 and A1-9 will remain as an "Agriculture" zone and the mitigation meander at Site A1-7, which was formed as a result of the channelization of Ng Tung River, is designated as a "Conservation Area" zone. This site is conserved for relocation of Man Kam To egret and there is a general presumption against development.

Creating a Comprehensive Green Network

In order to enhance the living environment in the NDA, an open space system is embedded into the NDA to provide a continuous green network across the neighbourhood and create convenient accesses to the riverside promenade either from the NDA development or the existing Fanling/Sheung Shui New Town. The riverside promenade along Ng Tung River forms an important element to the open space system in FLN NDA and will also be linked all the way to Long Valley in Kwu Tung North. It aims to improve the environment along the River for leisure and recreational use.

Green spines (Sites B2-9, B3-8, C2-2, C2-10, D1-4, D1-5, D2-3, D2-5, D2-8, D2-10, D2-11, D3-5 and D3-10) are provided to connect the residential areas to the riverside promenade and Central Park, providing not only green linkages to the recreational resources, but also important

physical and visual relief to the residential developments in the NDA as well as existing residential neighbourhoods in the Fanling/Sheung Shui New Town.

Major green corridors and secondary green corridors are designed in the form of tree avenues, boulevards, pedestrian streets and green walkways which make the FLN NDA visually cohesive in terms of the continuity of tree and shrub planting and allow, where possible, continuous and safe pedestrian access throughout the development.

Sites A1-3 and A1-9 will help preserve the green aspect in north-western part of the NDA, by remaining as an “Agriculture” zone and the conservation area at Site A1-7, reserved for the Man Kam To egret, will also help retain the green aspect of the area.

Creating Visual Connections and Breezeways

The riverside location and the linear configuration of the NDA mean that there is a wealth of opportunity for attractive views and breezeways under prevailing north-easterly winds. The riverside promenade and riverside parks along Ng Tung River and the Central Park (Site C2-8) provide visual and spatial relief in the NDA, with the Central Park providing a large-scale visual and physical break between the two main residential neighbourhoods. The Central Park and the north-south running green spines also serve as major view corridors to protect the long-range views toward the green backdrop in the north.

Furthermore, to allow prevailing winds to pass through the NDA, all breezeways are oriented in a northeast-southwest direction creating visual permeability across the residential neighbourhoods to the River and Central Park.

Public Open Space System

A number of sites are zoned “Open Space” in FLN NDA to provide public recreational and leisure space and to integrate major parks and riverside promenades. This land is intended primarily for the provision of outdoor open-air public space for active and/or passive recreational uses. The open space at Site C2-8 is proposed as the Central Park which serves as a major recreational area and combines with the social services and recreational facilities in the vicinity (Site C2-6) to serve as a civic core of the NDA. Areas along the northern and southern banks of Ng Tung River will be developed into continuous promenades for the enjoyment of residents and visitors and Riverside Parks are also proposed at a number of sites such as Sites B1-2, B2-1, B2-8, B2-10, D1-2 and D1-3, as other activity nodes in the NDA. The public open space system will therefore enhance the visual amenity of the area and improve the overall landscape character.

Buffer Areas

Amenity strips will be provided alongside many road edges to enhance the amenity and to serve as visual buffers. They offer good opportunities

for landscaping and tree planting and may screen views of roads and generally enhance their landscape and visual amenity.

Preservation of Cultural Heritage

Man Ming Temple (a Grade 3 historic building) will be preserved and located within open space for public use.

Other planning principles less directly affecting L&V impacts of the FLN NDA include:

Sufficient Government, Institution and Community (G/IC) Facilities - Sufficient land has been reserved for a comprehensive range of G/IC uses to accommodate the needs of the future and existing residents in Fanling/Sheung Shui New Town.

Concentration of Population around Major Transport and Activity Nodes - High density residential and commercial developments are clustering within 500 m catchments of the proposed public transport interchanges. By concentrating the population around certain nodes, fragmented land use is avoided and potentially L&V impacts reduced.

Balanced Community Mix - A range of housing types are accommodated to cater for different housing needs.

Incorporation of Environmentally 'Green' Features – such as passive building design, water saving fixtures, green construction materials, reuse of TSE for non-portable purposes such as landscape irrigation, etc. The revised RODP allows for subsequent implementation of road-based EFTM and Site B2-2 in FLN NDA is reserved as the parking and operation facilities for EFTM which is intended to serve the NDAs in the future.

12.5.3 Existing Outline Zoning Plans (OZPs)

The review of the OZPs has included a review of the Plans as well as the accompanying Notes and Explanatory Statements. The NDA Study Areas and NDA boundaries have been superimposed onto existing OZPs and Development Permission Area (DPA) Plans to determine the effect of the revised RODPs on the current land zoning. Details for each NDA are provided below.

12.5.3.1 Kwu Tung North NDA

The KTN NDA Study Area is currently covered by a number of OZPs and DPA Plans as illustrated in **Figure 12.1.0**. Details of the affected DPA Plan(s) are given in **Section 12.5.4 Land Use Planning for Frontier Closed Area**, and further details of the OZPs affected by KTN NDA are provided below.

The KTN NDA (as defined by the NDA boundary) principally sits within Approved Kwu Tung North OZP No. S/NE-KTN/8 and in the north a small area falls within DPA/NE-MTL/2. Although the southern periphery of the NDA boundary touches upon the Draft Kwu Tung South OZP No. S/NE-

KTS/13, the areas affected are so small as to be considered insignificant (see **Figure 12.1.0**).

Table 12.5.1 summarizes the areas of existing zoning types of OZP No. S/NE-KTN/8 within the KTN NDA boundary. Although KTN NDA falls almost entirely within this OZP boundary, some falls within other DPA plans. However essentially no development is proposed (e.g. H1-1, B1-3, D1-8, E1-8, F1-5, F1-6, and part of G1-3 are all designated to remain as Green Belt) except the water service reservoirs at G1-4 and G1-5. Other key changes are listed in the table.

Table 12.5.1- Approved Kwu Tung North OZP No. S/NE-KTN/8

Zoning Type	Existing Area within OZP (ha)	Area within NDA Boundary (ha) (Approximate percentage that will undergo land use change)	Comments on Major land use changes
Agriculture (AGR)	131.59	130.51 (35%)	More than half of this zoning type will not be modified, having been designated to be retained as Agricultural Land (e.g. C1-6, C2-2, C2-4, C2-5), protected in as a Nature Park in Long Valley (C1-9), or partly falling in Green Belt sites (e.g. H1-1). Approximately 35% of this zoning type will be modified by the proposed development: various commercial, research and development facilities and residential sites west of the Sheung Yue River and Long Valley (e.g. B3-5, B3-12, part of A2-9, D1-7 etc.); amenity and government facilities in the south west of the NDA (e.g. B1-1, B1-4, B1-9, etc. and the proposed Plant for District Cooling System in B1-7); and part of the area of AGR in the mid-west of the NDA (approximately 2 ha) will also be modified by the proposed swimming pool and sports centre (E1-5) and primary school (E1-2).
Comprehensive Development Area (CDA)	18.21	18.21 (100%)	Both areas of CDA in this OZP will change to compatible land uses. The area in the south west of the NDA is proposed to accommodate part of the hospital, polyclinic and general clinic/healthcare facilities (B2-2) as well as some educational (e.g. B2-5, B2-6, B2-7), residential use (e.g. A1-4, A1-2) and the CLP substation (B2-4). The area further to the east in the NDA, will change to accommodate some residential sites (e.g. A1-9) and distributor roads and a small part will be affected by sites proposed for commercial, research and development facilities (e.g. B3-8).
Government / Institution / Community (G/IC)	11.52	11.52 (15%)	There are no significant changes to this land zoning. Many facilities such as Lo Wu Saddle Club, Lo Wu Correctional Institution and an existing basketball court (C2-3) will remain unaffected. Other areas that are affected fall with sites proposed for the same land use (e.g. primary school at E1-2 and police facilities at E1-3). The former Ma Tso Lung Landfill area is proposed as open space (O), which will be a land use change (about 15%), but this is compatible with the current land use.

Zoning Type	Existing Area within OZP (ha)	Area within NDA Boundary (ha) (Approximate percentage that will undergo land use change)	Comments on Major land use changes
Green Belt (GB)	107.23	107.12 (25%)	Of the approximately 107.12 ha of GB in this OZP that falls within the revised RODP, approximately 80 ha (approximately 75 %) falls on sites designated to remain as Green Belt (e.g. B1-3, H1-1, E1-8, D1-8, F1-5, F1-6 and part of G1-3) and will be unaffected. Of the remaining approximate 25% of land where land use change is proposed, some is proposed for compatible land use (e.g. The remaining Lo Wu Firing Range at G1-2, open space at E1-7 for Fung Kong Shan Park), however approximately 18 ha is proposed for land uses that are not compatible; one site west of Fung Kong foothill is proposed for a fire station cum ambulance depot (E1-6) and part of a site for a sports ground/ sports complex (F1-1) will also fall on GB; Sites D1-12, D1-13 and D1-14 are Government reserves or potential activity centres which are not compatible either. Equally the Sites reserved for research and development in support of LMC Loop Development at F1-3 are not compatible. Finally the proposed district distributor roads also partially fall in this zoning (e.g. at B1-3 and west of A2-2) and are not compatible.
Industrial (Group D) (I(D))	26.03	26.03 (100%)	All I(D) in this OZP will change in land use. It is mainly proposed for residential uses and some commercial, research and development use which are considered compatible. Some affected areas fall on sites proposed for amenity uses which would be considered to enhance the land use.
Open Space (O)	7.19	7.19 (60%)	All the Open Space in this OZP falls within the NDA boundary but just over half will change land use to become residential (e.g. public rental housing at A1-2, and high density residential zone at A1-6) and comprehensive development area (B2-10), while the rest will remain as open space (e.g. A1-10 and B2-9).
Open Storage (OS)	43.44	43.44 (100%)	All the Open Storage in this OZP falls within the revised RODP and will be converted to open space, residential, educational and recreational land uses as well as amenities such as roads or railway associated facilities.
Village Type Development (V)	14.03	14.03 (0%)	There will be no changes to this zoning type in this OZP.
TOTAL	358.2	358.1	

Approximately 18 ha of GB which is proposed for incompatible land use such as fire station cum ambulance depot, government reserves or potential activity centres etc., as described in the table above. During formulation of the revised RODP, however, areas with mature vegetation and/or hilly terrain have been designated as GB to protect existing green areas and preserve the hilly terrain as a green backdrop to the NDA, with the primary intention of reserving the natural and green setting of the NDA insofar as possible. Areas of recognized burial grounds have also been designated as GB, as well as high value Fung Shui woodlands at Site D1-8, such that in total approximately 120 ha of GB will remain in KTN NDA, comprising roughly 30% of the NDA area. **Figures 12.9.3-5** highlight the urban context and some of the design measures incorporated into the revised RODP. In addition, various sites have been designated for compensatory woodland planting (see **Figure 12.15.0** Landscape Mitigation Plan for KTN NDA) which will also enhance the green aspect.

Additionally, approximately 45 ha of land zoned AGR will be lost to various commercial, research and development facilities and residential sites west of the Sheung Yue River and Long Valley, amenity and government facilities in the south west including the proposed Plant for District Cooling System and part of the swimming pool and sports centre proposed for this NDA. Given this loss of AGR, careful consideration has been given to the Long Valley area.

Some 37 hectares of land in the core area of Long Valley generally of high ecological value are designated as a Nature Park to be implemented by the Government as part and parcel of the NDAs project. It will become a “green lung” contributing to a quality living environment for the KTN and FLN NDAs. It will conserve and enhance the ecologically important environment which supports a diverse bird community, and compensate for the wetland loss due to the NDAs development. A visitor centre will be provided to demonstrate the ecological importance of Long Valley. As the ecological value of this area is closely related to the existing wet farming practice, part of the Nature Park may allow such use based on guidelines and requirements to be prescribed by the Government. The Nature Park will showcase the harmonious blending of farming activities with nature conservation.

For the area to the north of the Nature Park which comprises mainly wet agriculture and fishponds, the current “AGR” zoning would be retained to allow continuation of the existing farming practices, while the area to the south of the Nature Park would also be retained as “AGR” zoning to act as a buffer for the Nature Park.

12.5.3.2 Fanling North NDA

The FLN NDA Study Area is currently covered by a number of OZPs and DPA Plans as illustrated in **Figure 12.2.0.1-2**. Details of the affected DPA Plans are given in **Section 12.5.4 Land Use planning for Frontier**

Closed Area and further details of the OZPs affected by FLN NDA are provided below.

The FLN NDA Project Site (as defined by the NDA boundary) principally sits within two OZPs, namely:

- Approved Fu Tei Au and Sha Ling OZP No. S/NE-FTA/12
- Draft Fanling / Sheung Shui OZP No. S/FSS/17

Due to the proposed service reservoir in northern FLN NDA at Site A3-1, some of the Approved Hung Lung Hang OZP No. S/NE-HLH/7 is also affected by this NDA. In addition, although a very small area of the FLN NDA sits within the Draft Lung Yeuk Tau and Kwan Tei South OZP No. S/NE-LYT/15, the area affected is under 0.1 ha and is not considered significant for the discussion (see **Figure 12.2.0.1**).

Tables 12.5.2, 12.5.3 and 12.5.4, summarize the areas of existing zoning types in OZPs No. S/NE-FTA/12, S/FSS/17 and S/NE-HLH/7 respectively within the FLN NDA boundary and give details of the key changes. It should be noted that the alignment of Ng Tung River after training has not been incorporated into the Fanling/ Sheung Shui OZP, such that currently much of the trained river falls within land zoned as AGR and GB. Therefore, the actual impact of the FLN NDA on AGR and GB is likely to be less than predicted by the numbers shown in **Table 12.5.3**.

Overall, approximately 86 ha of GB will undergo land use change in the FLN NDA, mainly to make way for proposed residential developments but also to accommodate a proposed water service reservoir. Provision has been made for the inclusion of large areas of open space between buildings in many of these residential areas to help alleviate this loss, with a total of approximately 25 ha of open space in the NDA. During formulation of the revised RODP, care has been taken to consider natural and landscape features and provide green corridors (See **Section 12.5.2.3**).

Figures 12.10.3-5 highlight the urban context and some of the planning measures incorporated into the revised RODP. In addition, various sites have been designated for compensatory woodland planting (see **Figure 12.16.0** Landscape Mitigation Plan for FLN NDA and **Figure 12.15.0** for KTN NDA Landscape Mitigation Plan).

Additionally, approximately 16 ha of AGR will be lost to various land uses such as proposed Police Driving and Traffic Training Division, as well as some residential, G/IC uses and the distributor roads. However, approximately 12 ha of land in Fu Tei Au has been avoided and retained as “AGR”, allowing continuation of farming activities there.

Table 12.5.2 – Approved Fu Tei Au and Sha Ling OZP No. S/NE-FTA/12

Zoning Type	Existing Area within OZP (ha)	Area within NDA Boundary (ha) (Approximate percentage that will undergo land use change)	Comments on Major Land Use Changes
Agriculture (AGR)	175.66	39.12 (65%)	Some of the AGR in this OZP within FLN NDA is the river which will not be affected but most of the rest of this zoning will undergo land use change. Approximately 15% of this AGR zoned land in the FLN NDA is on site proposed as open space and this is fairly compatible with the current use. Another approximately 45% in the west of FLN NDA, AGR is proposed to change to land use types that are not compatible: Government land for a Police Driving and Traffic Training Division (A1-8). Further east approximately another 5% will be affected by some residential sites (e.g. B1-7) and Government sites proposed for a sports centre and integrated children and youth service centre (C2-6). In addition some of the AGR will be converted to amenity land for roads.
Government / Institution / Community (G/IC)	25.39	1.68 (100%)	This G/IC affected by the FLN NDA will all change land use to either residential or a village re-site area.
Green Belt (GB)	112.50	0.03 (0%)	Not a significant area – likely discrepancies in GIS mapping.
Open Storage (OS)	7.19	0.06 (0%)	Not a significant area – likely discrepancies in GIS mapping.
Other Specified Uses (OU)	13.35	2.51 (100%)	The area affected in this OZP is all proposed to be used for Police's weapons training complex (A1-11).
TOTAL	334.09	40.75	

Table 12.5.3 – Draft Fanling / Sheung Shui OZP No. S/FSS/17

Zoning Type	Existing Area within OZP (ha)	Area within NDA Boundary (ha) (Approximate percentage that will undergo land use change)	Comments on Major Land Use Changes
Government / Institution / Community (G/I/C)	105.63	1.63 (0%)	This G/I/C area affected is in the south east of the FLN NDA and will not change land use as it is proposed for as government reserve (D2-15) and to re-provide the existing North District Temporary Wholesale Market for Agricultural Products (D1-6).
Green Belt (GB)	159.02	89.30 (95%)	Most of the area of GB within the FLN NDA will undergo land use change, with most of it converted to other incompatible land uses, mainly residential (e.g. B1-7, B2-6, B2-7, B2-11, B2-12, B3-2, B3-3, B3-6, B3-7, B3-9, D2-2, D2-4, D2-6, D2-9, D2-12, D3-1a, D3-1b, D3-1c, D3-3, D3-4, D3-6, D3-7, D3-8) and distributor roads. Most of the residential areas have provision of open space between the buildings however.
Industrial (I)	58.37	1.51 (100%)	This area is due to be converted to road and to land proposed for Government use, namely a government reserve (D2-16) and to re-provide the existing North District Temporary Wholesale Market for Agricultural Products (D1-6).
Open Space (O)	47.44	2.62 (80%)	Most of this small area of open space affected by the FLN NDA is proposed for residential use (e.g. public rental housing at D3-8 and high density residential zone at D3-6), school (Site D3-11) as well as part of a road. A small area remains as open space (D3-10) or more compatible land use (e.g. amenities at D3-9).
Other Specified Uses (OU)	35.82	0.11 (0%)	Not significant area – likely discrepancies in GIS mapping.
Residential (Group B) (R(B))	8.18	0.01 (0%)	Not significant area – likely discrepancies in GIS mapping.
Residential (Group C) (R(C))	23.23	0.29 (100%)	Likely to be affected by land proposed for a distributor road with the FLN NDA.
TOTAL	437.69	91.72	

Table 12.5.4 –Approved Hung Lung Hang OZP No. S/NE-HLH/7*

Zoning Type	Existing Area within OZP (ha)	Area within NDA Boundary (ha) (Approximate percentage that will undergo land use change)	Comments on Major Land Use Changes
Government / Institution / Community (G/IC)	1.06	0.17 (100%)	The G/IC area in this OZP is already a firing range with a fresh water service reservoir underneath it. It is affected by the proposed FLN Fresh Water Service Reservoir (A3-1) and therefore will not change land use.
Green Belt (GB)	245.87	1.31 (100%)	A very small portion of the GB in this OZP will be affected by the FLN NDA at Table Hill, by the proposed FLN Fresh Water Service Reservoir (A3-1) and access road. Therefore this small area will undergo land use change, to an incompatible land use.

*Only affected zones are detailed. Certain zones e.g. “Agriculture” and “Village Type Development” do not fall within the NDA Boundary and will not be affected.

12.5.3.3 Summary

In summary, the NDAs have a great variety of mixed land uses and there are some potential conflicts with the existing planning and development control framework which may not be in line with the existing OZPs as summarised in **Tables 12.5.1-4**. The text in **Sections 12.5.3.1** and **12.5.3.2** help explain these conflicts. Measures taken to address them are summarized below.

Although a large area of land zoned GB and AGR will be affected by the NDAs as shown in **Tables 12.5.1 and 12.5.3**, it should be noted that the alignment of Ng Tung River after training, has not been incorporated into the OZP, such that currently much of the trained river falls within land zoned AGR and GB. As such, the actual impact of the FLN NDA on AGR and GB zones is likely to be less than predicted by the numbers shown in the tables.

The nature of the project inevitably means there will be some loss of GB and AGR zones, and therefore careful consideration has gone into the planning stages of the NDAs to help alleviate the loss. Some key planning principles for KTN NDA are to preserve and enhance the ecological sensitive area of Long Valley, respect the natural topography and enhance the natural landscape in Fung Kong Shan as well as provide a continuous open space system, integrated into a landscape framework with connections between them. For FLN NDA, some of the key planning principles include creating a “green” new town by providing a strong and attractive landscape framework with linked open spaces and providing a continuous open space alongside the river, connecting with open spaces in the new and existing developments areas.

Whilst a total of approximately 104 ha of GB zone will be affected by the NDA development, approximately 120 ha of GB zone will be protected in KTN NDA. A total of approximately 58 ha of open space is also provided in the NDA, of which much is passive open space, and this will also go some way to help alleviate the loss of GB zone.

Approximately 45 ha of AGR in KTN NDA and 16 ha of AGR in FLN NDA will be lost. AGR has been retained as far as possible in the planning stage e.g. the area to the north and south of Long Valley Nature Park in KTN NDA (approximately 45 ha) as well as a large area of land in of Fu Tei Au (approximately 12 ha) in FLN NDA will be retained as AGR zone. Considering the KTN and FLN NDAs as a whole, careful consideration has also been given to the Long Valley area in KTN NDA to alleviate the overall loss of AGR; the core area of the Long Valley is designated as “Other Specified Uses (Nature Park)”. Farming practices may be allowed in the Nature Park based on guidelines and requirements to be prescribed by the Government.

It should be noted that the land use zoning designated in the OZP may not reflect the current condition of the land e.g. the land may have become abandoned and undergone succession to shrubby grassland; land may have been changed to open storage use; etc. Therefore more

accurate information regarding the impact on agricultural land will be made in the Landscape Impact Assessment in **Section 12.8** and the measures taken to alleviate any loss detailed in **Section 12.9**.

12.5.4 Land Use Planning for Frontier Closed Area (FCA) – Existing Development Permission Area (DPA) Plans

The Frontier Closed Area (FCA) was not covered by any OZPs. When the new Closed Area boundary is put in place, the total land area of the Frontier Closed Area (FCA) will be reduced from 2,800 ha to 400 ha in phases and the areas released from the FCA are now to be put under planning control.

The NDA areas fall within some of the area to be released. The future development of this area has been investigated in the Planning Department's "Land Use Planning for the Closed Area" study completed in July 2010, examining the future use of the areas released from FCA and their development potential and constraints. A number of DPA Plans based on the study's recommended development plan were gazetted on 30 July 2010.

- The landscape study area partly falls within two such DPA Plans: Part of the KTN NDA Study Area falls within the Approved Ma Tso Lung and Hoo Hok Wai DPA Plan No. DPA/NE-MTL/2 and touches upon the Approved Man Kam To DPA Plan No. DPA/NE-MKT/3 in the same area as the FLN NDA Study Area.
- The FLN NDA Study Area also touches upon the Approved Ma Tso Lung and Hoo Hok Wai DPA Plan No. DPA/NE-MTL/2 but none of FLN NDA itself actually lies within the DPAs.

Further details of the KTN NDA Project Site falling within DPA/NE-MTL/2 are detailed below.

Three KTN NDA land plots within DPA/NE-MTL/2 will keep the existing land use (i.e. Sites G1-1 Lo Wu Firing Range; G1-6 Lo Wu Saddle Club and G1-8 Lo Wu Correctional Institution) but other land plots (F1-3, G1-4 and G1-5) will change. Sites F1-1 and F1-3 fall within the area zoned as AGR and are currently reserved for a Sports Ground/ Sports Complex and Research and Development uses to support the LMC. KTN NDA land Sites G1-4 and G1-5 are designated for service reservoirs, and they fall onto the area zoned as GB. However, the changes would only constitute insignificant loss of AGR and GB compared with the total area in this DPA Plan.

12.6 Landscape Baseline Conditions

According to the Study Brief (ESB-176/2008) the baseline review comprises the identification of all existing LRs and LCAs within 500m of the NDA boundaries.

The overall Study Area for all the NDAs is very generally natural and rural. Complex LRs can be classified into different major categories, as follows:

- LR1 – Channelized Water Course
- LR2 – Water Course
- LR3 – Water Pond
- LR4 – Marsh/ Wetland
- LR5 – Plantation
- LR6 – Hillside Woodland
- LR7 – Lowland Woodland
- LR8 – Shrubland/Grassland Mosaic
- LR9 – Agricultural Land
- LR10 – Open Space / Recreational Area
- LR11 – Urban Development Area
- LR12 – Rural Development Area
- LR13 – Industrial / Open Storage
- LR14 – Major Transportation Corridor

The LCAs in the Study Area are classified into major categories as follows:

- LCA1 – Natural Hillside Landscape
- LCA2 – Rural and Urban Peripheral Village Landscape
- LCA3 – Urban Development Landscape
- LCA4 – Industrial Landscape
- LCA5 – Lowland Agricultural Landscape
- LCA6 – Major Transportation Corridor Landscape
- LCA7 – Major Water Course Corridor Landscape

The LRs and LCAs of each NDA are described in further detail, together with their sensitivity, in **Sections 12.6.2 and 12.6.3** for KTN NDA and FLN NDA respectively.

12.6.1 Broad Brush Tree Survey

A broad brush tree survey has been carried out within the study area which estimates that there are approximately 17,000 trees which may be affected by the proposed development. Major tree species included *Acacia confusa*, *Acacia auriculiformis*, *Araucaria heterophylla*, *Bauhinia blakeana*, *Bombax ceiba*, *Cassia siamea*, *Celtis sinensis*, *Cinnamomum camphora*, *Clausena lansium*, *Citrus maxima*, *Dimocarpus longan*, *Eucalyptus camaldulensis*, *Ficus virens*, *Ficus microcarpa*, *Litchi chinensis*, *Leucaena leucocephala*, *Macaranga tanarius*, *Mangifera indica*, and *Melaleuca quinquenervia*. Many trees are found in the foothills of the natural upland, as well as the rural fringe in between different villages and they are generally mature.

This preliminary survey suggests that more than 30% of the affected trees can be retained or transplanted and that the remaining would be felled. A detailed Tree Felling Application process will be carried out at a later detailed design stage, to finalise tree treatment and allocate compensatory planting areas including available open space, parks and streetscape.

There are five Old and Valuable Trees (OVTs) found in the Study Area, all in KTN (ref. No. LCSD/ N45, LCSD/ N47, LCSD/ N49, LCSD/ N50, LCSD/ N51) and their locations are illustrated in **Figure 12.5.0** (key plan) and **Figure 12.5.7** (zoom in). All these OVTs will be retained.

12.6.2 Kwu Tung North NDA

The baseline LR of KTN NDA, are detailed along with their sensitivity in **Table 12.6.1** and mapped in **Figure 12.5.0** (key plan) and **Figures 12.5.1-8** (zoom ins). Illustrative photographs of the LR are presented in **Figures 12.5.9-20**.

The baseline LCAs of KTN NDA are listed in **Table 12.6.2** and mapped in **Figure 12.7.0 (key plan) and Figures 12.7.1-8 (zoom ins)**. Illustrative photographs of the LCAs are presented in **Figures 12.7.9-10**.

LRs of higher sensitivity are generally natural streams, woodland, marsh/ wetland, some water ponds, although other resource such as agricultural land and rural development areas may also have high sensitivity due to certain characteristics. For KTN NDA key LR are summarized below.

LRs associated with natural water bodies are often considered higher value resources. All the natural streams (those at Tai Shek Mo (KLR-2.2), Ki Lun Shan (KLR-2.3) and Ma Tso Lung (KLR-2.4)) have high sensitivity even if some are not perennial or have sections that are less natural. The streams in Kwu Tung (KLR-2.1) were generally natural but degraded by pollution, with seasonal flows and some sections fortified by concrete banks such that they were considered less sensitive and rated 'medium'. Similarly to watercourses, ponds are generally considered a valuable

landscape resource and those at Ho Sheung Heung (KLR-3.1), in Long Valley associated with agriculture (KLR-3.2) and beside Kam Hang Road (KLR-3.5) and in the Closed Area (KLR-3.8) are all considered as having high sensitivity mainly due to their low ability to accommodate change. In addition all the marsh/wetland areas in the KTN NDA including those in Long Valley (KLR-4.1), the mitigation wetland along Sheung Yue River (KLR-4.2), wetland/ marsh in the Closed Area (KLR-4.3) and marsh around Pi Tau Lo and Tsung Yeun (KLR-4.4), are all rated as highly sensitive largely due to their low ability to accommodate change.

Given the nature of trees as a precious landscape resource, all areas of woodland within the NDA (both hillside and lowland) are rated as having high sensitivity with the exception of some woodland at Veron's Pass (KLR-7.5) which is frequently disturbed by human activities and of lower quality. In addition, the five OVTs found amongst roadside planting near Fanling Highway and Castle Peak road are highly sensitive. Trees found within separate small patches of plantation, which can be recreated reasonably easily, are considered less valuable resources.

While most agricultural LRs have medium sensitivity, the agricultural land in Long Valley (KLR-9.1) is a large contiguous area which would be difficult to recreate in Hong Kong due to a lack of similar areas, hence this agricultural land is recognized as having high sensitivity and is a key element of KTN NDA. Similarly, most rural development areas (KLR-12) are of medium sensitivity, except the sensitivity of the rural development area in Long Valley, Ying Kong, Tsung Pak Long and Hakka Wai is high as a number of historical buildings are located there, and even the whole of Hakka Wai is designated as a 'Grade 1 historic building'. Overall it is noted that the general Long Valley area is a key landscape within KTN NDA.

It should also be noted that there is a considerable amount of open storage/ industrial land in KTN NDA, and all of these areas are considered of low quality and sensitivity.

With regards to LCAs, Natural Hillside Landscape in KTN NDA (KLCA-1) is considered highly sensitive, largely due to its high landscape quality and inability to accommodate change. The Lowland Agricultural Landscape encompassing the Long Valley area (KLCA-5) similarly has high sensitivity given it includes a large contiguous area of high quality agricultural land in the Long Valley area (see KLR-9.1) and has a low inability to accommodate change. Rural and Urban Peripheral Village Landscape (KLCA-2) and Major Water Course Corridor Landscape (KLCA-7) have medium sensitivity, largely due to their moderate amenity value and the Major Transport Corridor Landscape (KLCA-6) also has medium sensitivity mainly due to the extensive planting along the Fanling Highway and Castle Peak Road conferring high greening and lowering this LCA's ability to accommodate change. Urban Development Landscape (KLCA-3) and Industrial Landscape (KLCA-4) have low sensitivity due to their low landscape quality and high ability to accommodate change.

Table 12.6.1 - Landscape Resources and their Sensitivity- KTN NDA (Refer to Figure 12.5.0 (key plan) and Figures 12.5.1-8 (zoom ins))					
Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLR 1 – Channelized Water Course					
Refers to modified water courses channelized with concrete or grasscrete, or with gabion-fortified banks, or water courses undergoing such channelization. This LR includes both large channelized river water courses as well as some much smaller concrete lined water courses associated with agricultural land. This LR also includes some walkways along the larger water course and the vegetation associated with the water course, both within the channel and along the banks as well as the ridge of the banks. The vegetation mainly consists of grasses and shrubs, but also includes trees in some areas as detailed further in the individual LR descriptions.					
Within the Study Area of KTN NDA this LR includes sections of Ng Tung River, Shek Sheung River, and Sheung Yue River and is one of the prominent landscape features.					
KLR-1.1	Ng Tung River	Medium	Medium	Medium	Medium
Ng Tung River runs across the northeast portion of KTN NDA study area. It combines with two other major channelized watercourses, that of Sheung Yue River and then Ng Tung River, before they all empty into the Shenzhen River far outside the study area. This river in the Study Area is modified with grasscrete banks and tree planting is found along some of its banks as well as neighbouring the banks. Dominant plantation tree species are <i>Acacia auriculiformis</i> and <i>Acacia confusa</i> . Other trees recorded in this LR include <i>Ficus virens</i> and <i>Leucaena leucocephala</i> . This river is reasonably capable of accommodating change and its sensitivity is medium .					
KLR-1.2	Shek Sheung River	Medium	Medium	Medium	Medium
Shek Sheung River collects water from the south and flows north, joining the Sheung Yue River west of the Sheung Shui Slaughter House. There is also a branch that splits from Ng Tung River and flows round the Shek Wu Hui Sewage Treatment Works to the south but this is mainly dry and a flood protection measure. This LR is mainly a grasscrete banked, trapezoidal channel, formed for the purpose of flood protection in the Kwu Tung and Fanling areas. Water partially dries out during the dry season and there are small water channels at the base of the channel when water flow is low, with grass on either side. A small section of this river flows through the eastern corner of Long Valley, where it is a narrow channel. There are grasses and shrubs along the river's embankment, as well as trees planted along both sides in many sections of the river. The dominant tree species are exotic, including <i>Acacia auriculiformis</i> , <i>Acacia confusa</i> and <i>Leucaena leucocephala</i> . Native trees can also be found in lower abundance, e.g. <i>Celtis sinensis</i> , <i>Cinnamomum camphora</i> , <i>Cleistocalyx operculatus</i> and <i>Sapium sebiferum</i> . Overall this river has medium amenity value and is reasonably capable of accommodating change. Its sensitivity is therefore considered to be medium .					
KLR-1.3	Sheung Yue River	Medium	Medium	Medium	Medium
Sheung Yue River runs across Long Valley from southwest to northeast where it joins Shek Sheung River before flowing into Ng Tung River. This river drains water in Ho Sheung Heung and Shek Tsai Leng to the west and Yin Kong and Tsung Pak Long to the east. Its banks are fortified with a rigid lining of stone masonry among which grasses grow sparsely between the stone blocks. At ground level, planted trees are found along both sides of the river. Most of the dominant trees are exotic, including species such as <i>Acacia auriculiformis</i> , <i>Acacia confusa</i> and <i>Leucaena leucocephala</i> . Other trees include the native species <i>Cordia dichotoma</i> , <i>Ficus virens</i> and <i>Macaranga tanarius</i> . This river is reasonably capable of accommodating change and its sensitivity is considered to be medium .					
KLR-1.4	Water Course Network in Long Valley	Medium	Low	High	Medium
This LR describes a network of waterways in the Long Valley area which eventually connect and flow into a box culvert near the Kwu Tung Road junction with Castle Peak Road. The channels are mainly vertically-sided concrete channels which are vital for irrigation purposes but have little vegetation. The riparian vegetation comprises common and widespread herb species. This LR has a reasonable ability to accommodate change, being a man-made network of water channels, but overall it is vital to the Long Valley agricultural area and its sensitivity is considered to be medium .					
KLR 2 – Water Course					
Refers to natural or semi-natural water courses, including short sections with concreted banks. This LR also includes vegetation associated with the water course, both within the streams and along the banks as well as in the immediate vicinity. The vegetation mainly consists of grasses and shrubs, but also includes trees in some areas such as the upland streams, as detailed further in the individual LR descriptions. The vegetation often provides a subtle transition between this LR and its surrounding LR(s). Within the Study Area of KTN NDA this LR includes watercourses running between different rural areas and villages, incorporating streams running off Ki Lun Shan and Tai Shek Mo, near Fung Kong and Shek Tsai Leng and around Kwu Tung itself.					
KLR-2.1	Streams in Kwu Tung	Medium	Medium	Medium	Medium
These streams, connecting with the Sheung Yue River, are located in the central area of KTN NDA Study Area. They pass through villages including Fung Kong, Tung Fong, Tong Kok, Shek Tsai Leng and south of Ho Sheung Heung. The upstream section is natural but degraded by pollution, with seasonal flows and heavily vegetated stream banks, overgrown with common grass species such as <i>Bidens alba</i> and <i>Pennisetum</i> spp. Other sections of these streams are fortified by concrete banks with grey water flowing. This LR has medium tolerance to change and its sensitivity is considered to be medium .					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLR-2.2	Natural Streams at Tai Shek Mo	Medium	Medium	Low	High
<p>These natural streams run off Tai Shek Mo, where rainwater flows down from the hill and reaches lowland areas such as Liu Pok and around Ngam Pin. Some of these streams are intermittent and cease flowing during the dry season. Grasses and shrubs overgrow the banks of these streams including common grasses such as <i>Alocasia odora</i>, <i>Wedelia trilobata</i> and <i>Panicum maximum</i>.</p> <p>This LR is relatively intolerant to change and its sensitivity is considered to be high.</p>					
KLR-2.3	Natural Streams at Ki Lun Shan	Medium	Medium	Low	High
<p>These natural streams run off Ki Lun Shan and flow down to the lowland area in the south of KTN NDA Study Area. They are not perennial streams and flow decreases and ceases during the dry season. Common grasses such as <i>Alocasia odora</i>, <i>Wedelia trilobata</i> and <i>Panicum maximum</i> grow abundantly along the banks.</p> <p>This LR is relatively intolerant to change and its sensitivity is considered to be high.</p>					
KLR-2.4	Natural Streams at Ma Tso Lung	High	Medium	Low	High
<p>This LR describes natural streams running off Ma Tso Lung to the lowland area in Ma Tso Lung San Tsuen in the northwest of KTN NDA Study Area. Riparian plants included fruit trees (i.e. <i>Dimocarpus longan</i> and <i>Litchi chinensis</i>) and native understory species (e.g. <i>Lophatherm gracile</i> and <i>Alocasia odora</i>) and the vegetation near the streams is dominated by the exotic climber species <i>Mikania micrantha</i> and herb species <i>Bidens alba</i> and <i>Alocasia macrorrhizos</i>. The section at Ma Tso Lung is regarded as ecologically important due to its naturalness and well developed bank area.</p> <p>This LR is relatively intolerant to change and its sensitivity is considered to be high.</p>					
<p style="text-align: center;">KLR 3 – Water Pond</p> <p>Refers to freshwater ponds. The ponds are often associated with agricultural land and used for irrigation, and punctuate the traditional field pattern. Some ponds are also found near residential or developed areas and have aesthetic landscape value and some are fish ponds. This LR also includes vegetation associated with the ponds, both within and around the banks as well as in the immediate vicinity. The vegetation mainly consists of grasses and shrubs, with scarce trees.</p> <p>The main locations of these water ponds within the Study Area of KTN NDA include both foothill and lowland areas and are most concentrated in Ho Sheung Heung and Long Valley.</p>					
KLR-3.1	Ho Sheung Heung Water Ponds	Medium	Medium	Low	High
<p>This LR is located within Ho Sheung Heung agricultural land and is a relatively large continuous area of water ponds within the study area of KTN NDA. These ponds retain water most of the time including during both the dry and wet seasons. The bunds of these ponds are vegetated by grasses and low shrubs, as well as some fruit trees such as <i>Musa x paradisiaca</i>, <i>Litchi chinensis</i>, <i>Mangifera indica</i>, <i>Dimocarpus longan</i> and <i>Citrus maxima</i>.</p> <p>The ponds in this area are of medium quality with common fruit trees and are relatively intolerant to change. The sensitivity of this LR is considered to be high.</p>					
KLR-3.2	Long Valley Water Ponds	Medium	Medium	Low	High
<p>This LR is located within Long Valley agricultural land. Water in the ponds is usually full in the wet season and periodically pumped out by local farmers during the dry season for management purposes and irrigation. Grasses grow along their banks and provide a subtle transition between this LR and its surrounding agricultural land.</p> <p>Overall these ponds are relatively intolerant to change and their sensitivity is high.</p>					
KLR-3.3	Fung Kong Shan Water Ponds	Low	Medium	Low	Medium
<p>The ponds of this LR are located at the foot of Fung Kong Shan, to the west and east of Ma Tso Lung Road. They are isolated water ponds and store rainwater in both the wet and dry seasons but appear to be mainly abandoned. Dense grasses and shrubs grow in their immediate vicinity, as well as the Palm species <i>Roystonea regia</i> and some fruit trees such as <i>Litchi chinensis</i> and <i>Dimocarpus longan</i>.</p> <p>The quality and significance of this LR is relatively low, but it is relatively intolerant to change. Its sensitivity is therefore considered to be medium.</p>					
KLR-3.4	Fu Tei Au Water Ponds	Low	Medium	Low	Medium
<p>This is a group of water ponds located between Fu Tei Au Road and Ng Tung River. Only a small number of these ponds fall within the study area of KTN NDA. The ponds were most likely used for irrigation purposes in the past and have now been abandoned. Common grasses (e.g. <i>Bidens alba</i> and <i>Pennisetum</i> spp.) and small trees (e.g. <i>Bombax ceiba</i> and <i>Leucaena leucocephala</i>) grow densely along the banks.</p> <p>The quality and significance of this LR is relatively low, but it is intolerant to change. Its sensitivity is therefore considered to be medium.</p>					
KLR-3.5	Water Ponds beside Kam Hang Road	Medium	Medium	Low	High
<p>The ponds of this LR are located along Kam Hang Road and surrounded by villages and some agricultural land. They generally share a similar appearance and condition to the Long Valley water ponds (KLR-3.2) and water is sometimes pumped out from the ponds during the dry season. The bunds and some areas with shallow water within these ponds are vegetated by grasses and low shrubs.</p> <p>Overall these ponds have medium amenity value and are relatively intolerant to change. This LR's sensitivity is considered to be high.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLR-3.6	Water Ponds at Pak Shek Au	Low	Medium	Low	Medium
<p>These are relatively small and isolated ponds at Pak Shek Au just north of the Fanling Highway in a small area of agricultural land now largely bordered by industrial land or open storage use. The ponds were most likely used for irrigation purposes serving the surrounding farmland in the past and have now been abandoned. Grasses and climbers overgrow their banks and their surfaces are largely covered in duckweed.</p> <p>This LR has low landscape quality with its small area and overgrown vegetation but it is relatively intolerant to change. Its sensitivity is medium.</p>					
KLR-3.7	Water Ponds at Tit Hang	Low	Medium	Low	Medium
<p>These are two small water ponds located at Tit Hang. Grasses and climbers overgrow their banks and are present in their immediate vicinity, while much of the water surface on one of the ponds in particular is covered in duckweed.</p> <p>This LR has low landscape quality and small area but it is relatively intolerant to change. Its sensitivity is medium.</p>					
KLR-3.8	Water Ponds within the Closed Area	Medium	Medium	Low	High
<p>Part of the northern KTN NDA study area lies within the Closed Area and the water ponds of this LR are mainly located north of Sheung Shui Water Treatment Works and between Fai King Road and Ng Tung River in the north east of the Study Area. A few ponds are also located just north of Ma Tso Lung, also within the Closed Area. The ponds in the north east of the Study Area are generally large and continuous covering a reasonably large area with some of them being active fish ponds, some inactive fish ponds and some connecting with wet agricultural land in their vicinity. The few ponds north of Ma Tso Lung are generally smaller and may be overgrown, but are associated with agricultural land also.</p> <p>This LR is relatively intolerant to change and its sensitivity is considered to be high.</p>					
KLR-3.9	Kam Tsin Tsuen Pond	Low	Medium	Medium	Medium
<p>The pond of this LR is associated with Kam Tsin Tsuen. It has manmade, stone banks with no vegetation and is fenced off from the surrounding walkway.</p> <p>This pond is relatively tolerant to change and its sensitivity is considered to be medium.</p>					
KLR-3.10	Wai Loi Tsuen Water Pond	Low	Medium	Medium	Medium
<p>This LR is on the periphery of Wai Loi Tsuen serving as the moat of this traditional village. It has concrete banks and is connected with the Shek Sheung River to its west.</p> <p>Since this is an LR having significant artificial characteristics, it is relatively tolerant to change, however the moat has cultural landscape significance and therefore its sensitivity is considered to be medium.</p>					
KLR 4 – Marsh/ Wetland					
<p>Refers to freshwater marsh/ wetland landscape resources, often found at old river meanders which have been truncated during river channelization and retraining, overgrown with herbaceous vegetation and often with some areas of seasonal or permanent open water. This LR also includes wetland areas along natural streams around Ma Tso Lung as well as areas that were once ponds but have not been actively managed for a long time.</p> <p>Within the Study Area of KTN NDA, this LR is found in Long Valley, along the channelized water courses as well as in the north around Ma Tso Lung.</p>					
KLR-4.1	Marshes in Long Valley	Medium	High	Low	High
<p>This LR is generally located in the middle of Long Valley agricultural land, including both permanent wet marshes and well vegetated marshes. For the permanent wet marshes, they used to be fish ponds or used for irrigation purposes and have now been abandoned and are not actively managed. Dense emergent vegetation is present in these marshes and shows relatively high diversity including <i>Phragmites karka</i>, sedges <i>Cyperus iria</i> and <i>Kyllinga aromatica</i>, and herbs and climbers <i>Ipomoea aquatica</i>, <i>Polygonum barbatum</i> and <i>Polygonum lapathifolium</i>. For the well vegetated marshes, a large portion of the wetland area is covered with rich and moist topsoil, colonised by common and widespread species such as <i>Brachiaria mutica</i>, <i>Panicum maximum</i>, <i>Bidens alba</i>, <i>Ludwigia perennis</i> and the Common Wetland Fern <i>Cyclosorus interruptus</i>.</p> <p>This LR is fairly rare, it is relatively intolerant to change and its sensitivity is considered to be high.</p>					
KLR-4.2	Mitigation Wetland	Medium	High	Low	High
<p>Several plots of marsh are located along the Sheung Yue River that borders the Long Valley agricultural land. They were formerly meanders of the river and were isolated during the river channelization. To mitigate the ecological impact resulting from channelization, these areas are now managed by a government department to provide marsh habitat, mainly for wetland dependent wildlife. As part of the habitat management, wetland plants and riparian vegetation have been planted. These plants include <i>Commelina diffusa</i>, <i>Hedychium coronarium</i>, <i>Ludwigia perennis</i> and <i>Nelumbo nucifera</i>. Bamboos and trees are also planted along the bunds, e.g. <i>Acacia auriculiformis</i>, <i>Cinnamomum camphora</i>, <i>Hibiscus tiliaceus</i> and <i>Ilex rotunda</i>.</p> <p>Mitigation habitats are fairly rare in Hong Kong and additionally, this LR is relatively intolerant to change. Its sensitivity is considered to be high.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLR-4.3	Wetland/ Marsh in the Closed Area	Medium	Medium	Low	High
<p>The area of this LR along the natural stream in northern Ma Tso Lung appears to have evolved from agricultural land that has been abandoned for a long time and is influenced by the water course, such that the land is mainly wet underfoot. The wetland vegetation is dominated by the exotic grass <i>Brachiaria mutica</i> and creeper <i>Ipomoea cairica</i> as well as native herbs including <i>Commelina diffusa</i>, <i>Colocasia esculenta</i>, <i>Cyclosorus interruptus</i>, <i>Ludwigia perennis</i> and <i>Pennisetum purpureum</i>. Vegetation near the streams is dominated by the exotic climber species <i>Mikania micrantha</i> and herb species <i>Bidens alba</i> and <i>Alocasia macrorrhizos</i>. Abandoned ponds north of Ma Tso Lung, likely previously used as fish ponds or for irrigation purposes, have been abandoned for a long time and now have dense emergent vegetation present in them such that they are considered marshes. They include vegetation such as exotic wetland species such as <i>Brachiaria mutica</i> and <i>Sesbania cannabina</i> and the invasive exotic tree species <i>Leucaena leucocephala</i> but also support some native wetland herb species including <i>Polygonum japonicum</i>, <i>Commelina diffusa</i> and <i>Ludwigia octovalvis</i>.</p> <p>This LR is relatively intolerant to change due to the succession of vegetation and the natural sensitivity of wetland/marsh. Its sensitivity is considered to be high.</p>					
KLR-4.4	Marsh around Pai Tau Lo and Tsung Yeun	Medium	Medium	Low	High
<p>Several ponds around Pai Tau Lo and Tsung Yuen, likely previously used as fish ponds, for wet agriculture or for irrigation purposes, have been abandoned for a long time and now have dense emergent vegetation present in them such that they are considered marshes. Commonly occurring species include <i>Alternanthera sessilis</i>, <i>Amaranthus spinosus</i>, <i>Chenopodium album</i>, <i>Cyperus pilosus</i>, <i>Ipomoea aquatica</i>, <i>Ludwigia perennis</i>, <i>Mimosa pudica</i> and <i>Panicum maximum</i>.</p> <p>This LR is relatively intolerant to change due to the succession of vegetation and the natural sensitivity of marsh. Its sensitivity is considered to be high.</p>					
KLR 5 – Plantation					
<p>Refers to medium sized and larger clusters of trees that have been planted and are distinct from natural woodland since they have been planted by man. Common tree species in this LR include native (<i>Ficus microcarpa</i>, <i>Celtis sinensis</i>, <i>Cinnamomum camphora</i> and <i>Macaranga tanarius</i>) and exotic species (<i>Acacia confusa</i>, <i>Casuarina equisetifolia</i> and <i>Melaleuca quinquenervia</i>) and further details are given in the individual LR descriptions.</p> <p>Within the Study Area of KTN NDA this LR includes patches of plantation to the south of Fanling Highway, in the vicinity of Hakka Wai and Wai Loi Tsuen as well as a number of OVTs as detailed in KLR-5.4.</p>					
KLR-5.1	Plantation South of Fanling Highway	High	Medium	Medium	Medium
<p>This LR mainly includes two plantation patches. One is close to the Sheung Yue River and is currently managed by a government department as one of the mitigation measures for the ecological impacts arising from the river channelization. Trees in this plantation area are fairly mature, including mainly planted exotic species (<i>Acacia confusa</i> and <i>Casuarina equisetifolia</i>). Other species in lower abundance include exotic species (<i>Melaleuca quinquenervia</i>) and native species (<i>Celtis sinensis</i> and <i>Macaranga tanarius</i>). The other patch of dense plantation is found just north of Hong Kong Golf Club and trees commonly recorded in this area include native (<i>Cinnamomum camphora</i>, <i>Ficus virens</i> and <i>Macaranga tanarius</i>) and exotic species (<i>Acacia confusa</i>, <i>Bombax ceiba</i>, <i>Melaleuca quinquenervia</i> and <i>Leucaena leucocephala</i>).</p> <p>Trees in this LR are dense and mature, providing a relatively high landscape value. However, it is a man-made resource and is able to be recreated reasonably easily meaning it has a reasonable capacity to accommodate change. Its sensitivity is therefore considered to be medium.</p>					
KLR-5.2	Plantation in the Vicinity of Hakka Wai	Medium	Medium	High	Medium
<p>This area of plantation is largely associated with the narrow Sheung Yue River channel and the villages of HakkaWai and Tsung Pak Long, including in their playground areas and public facilities. This plantation generally comprises exotic tree species dominated by <i>Acacia confusa</i>. Other species in lower abundance include exotic species (<i>Acacia auriculiformis</i>, <i>Acacia mangium</i>, <i>Araucaria heterophylla</i>, <i>Casuarina equisetifolia</i>, <i>Livistona chinensis</i> and <i>Leucaena leucocephala</i>) and native species (<i>Cinnamomum camphora</i>, <i>Ficus microcarpa</i>, and <i>Macaranga tanarius</i>).</p> <p>This LR has a relatively high capacity to accommodate change and its sensitivity is considered to be medium.</p>					
KLR-5.3	Plantation in the Vicinity of Wai Loi Tsuen	Medium	Medium	Medium	Medium
<p>A mixture of native and exotic trees is planted around the moat of Wai Loi Tsuen, serving as a good screen for the road and industrial area to the west of the village. Compared to those trees planted immediately along the Shek Sheung River in its vicinity, trees in this plantation have a relatively higher diverse composition, including native species (<i>Bauhinia blakeana</i>, <i>Celtis sinensis</i> and <i>Ficus microcarpa</i>) and exotic species (<i>Acacia confusa</i>, <i>Aleurites moluccana</i>, <i>Bombax ceiba</i>, <i>Cassia siamea</i>, <i>Casuarina equisetifolia</i>, <i>Eucalyptus citriodora</i>, <i>Grevillea robusta</i>, <i>Lagerstroemia speciosa</i> and <i>Melaleuca quinquenervia</i>).</p> <p>This LR has medium amenity value and a reasonable capacity to accommodate change and it is sensitivity is considered to be medium.</p>					
KLR- 5.4	OVTs along Fanling Highway and Castle Peak Road	High	High	Low	High
<p>This LR refers to OVTs found in the roadside planting along Fanling Highway and Castle Peak Road. There are five (5) OVTs as classified by the Leisure, Culture and Services Department (LCSD) and protected by technical circular ETWB TCW No.29/2004. They are all located nearest to Castle Peak Road (location indicated on the Figure12.5.0 and Figure 12.5.7) and reference numbers are. No. LCSD/ N45, LCSD/ N47, LCSD/ N49, LCSD/ N50, LCSD/ N51). All the trees species are <i>Melaleuca quinquenervia</i> of unknown age, registered in September 2004 and last inspected in August 2012.</p> <p>LCSD/ N45, LCSD/ N47, LCSD/ N50, and LCSD/ N51 all have ‘large size’ as their special characteristic, reaching between 15-18 m in height, 1130-1280 mm diameter at breast height (DBH) and 9-16 m crown spread. LCSD/ N49 is listed as having ‘outstanding form’ as its special characteristic and is 15 m high with a DBH of 670 mm and a crown spread of 8 m.</p> <p>These trees have a low ability to accommodate change and are highly valued. The sensitivity of this LR is high.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLR 6 – Hillside Woodland					
Refers to woodland areas largely scattered over hillsides, including at the base of hills and associated patches of woodland. This LR is predominantly composed of native tree species and is <i>generally</i> located some distance from human activities and hence disturbance (except at the base of hills where it often borders rural development areas where there is human activity), growing naturally with some understorey vegetation. It can include areas of Fung Shui Woodland growing in hillsides in the vicinity of villages as detailed in the individual descriptions. Common tree species in this LR include <i>Macaranga tanarius</i> , <i>Leucaena leucocephala</i> , <i>Celtis sinensis</i> and <i>Ficus microcarpa</i> . Further details are given in the individual LR descriptions.					
Within the Study Area of the KTN NDA, this LR is found at the hillsides of Ki Lun Shan, Tai Shek Mo, Ma Tso Lung, Tit Hang, Fung Kong Shan as well as northwest of Ho Sheung Heung.					
KLR-6.1	Ki Lun Shan Hillside Woodland	High	Medium	Low	High
This LR lies on the northern foothills of Ki Lun Shan, bordering shrubland / grassland on the higher ground above and rural villages and lowland woodland in the lowland area below. Due to limited human disturbance, these trees are mature, medium to large in size and growing on hillsides including the foothills. Dominant tree species include <i>Celtis sinensis</i> , <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i> .					
This LR is considered to be relatively mature and of high quality and it has little capacity to tolerate change. The sensitivity of this LR is considered to be high .					
KLR-6.2	Tai Shek Mo Hillside Woodland	High	Medium	Low	High
Several small patches of woodland are scattered among the foothills of Tai Shek Mo. Dominant species include exotic trees <i>Acacia confusa</i> and <i>Casuarina equisetifolia</i> as well as native trees <i>Celtis sinensis</i> , <i>Cinnamomum camphora</i> , <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i> .					
This LR is considered to be relatively mature and of high quality and it has little capacity to tolerate change. The sensitivity of this LR is considered to be high .					
KLR-6.3	Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong	High	Medium	Low	High
This LR refers to the narrow, winding and largely continuous patches of woodland in the hillside areas of Ma Tso Lung, Tit Hang and Fung Kong. Woodlands in these areas predominantly border uphill shrubland/grassland areas and lowland woodlands, and sometimes adjoin rural and industrial areas. Due to limited human disturbance, these trees are mature and of medium to large sizes. Dominant trees include both native and exotic species. Dominant native trees are <i>Ficus hispida</i> , <i>Cinnamomum camphora</i> , <i>Rhus succedanea</i> , <i>Celtis sinensis</i> , <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i> . Dominant exotic species include <i>Melaleuca quinquenervia</i> , <i>Leucaena leucocephala</i> , <i>Melia azedarach</i> , <i>Acacia confusa</i> and <i>Casuarina equisetifolia</i> .					
This LR is considered to be relatively mature, of high quality and it has little capacity to tolerate change. The sensitivity of this LR is considered to be high .					
KLR-6.4	Ho Sheung Heung Fung Shui Woodland	High	High	Low	High
Ho Sheung Heung Fung Shui Woodland is bound by Ho Sheung Heung Road, Ho Sheung Heung Pai Fung Road and Chung Kuk Path and covers a small hill. It used to be a complete area of woodland with continuous canopy but has been fragmented by hill fires. Grasses and shrubs have now colonised the bald areas to connect the woodland patches. Apart from <i>Aquilaria sinensis</i> , a species of conservation interest, other typical Fung Shui Woodland trees are also found, such as <i>Garcinia oblongifolia</i> , <i>Sterculia lanceolata</i> and <i>Litsea glutinosa</i> . Other dominant trees include native species <i>Celtis sinensis</i> , <i>Ficus microcarpa</i> , <i>Ficus hispida</i> , <i>Macaranga tanarius</i> , <i>Bischofia javanica</i> , <i>Cinnamomum camphora</i> , <i>Microcos paniculata</i> and <i>Schefflera heptaphylla</i> and exotic species <i>Acacia confusa</i> , <i>Bombax ceiba</i> , <i>Dimocarpus longan</i> and <i>Melia azedarach</i> of medium to large sizes.					
This Fung Shui Woodland has high amenity and cultural value and is intolerant to change. Its sensitivity is considered to be high .					
KLR 7 – Lowland Woodland					
Refers to woodland growing on low lying ground (generally <40 mPD), often found near rural village areas in small, fragmented patches, with differing tree species according to location. This LR can be found in patches within areas of human activity and also includes some Fung Shui Woodland of particular cultural importance, located adjacent to certain villages as detailed in the individual descriptions. Common plant species in this LR include <i>Acacia confusa</i> , <i>Celtis sinensis</i> , <i>Cinnamomum camphora</i> , <i>Leucaena leucocephala</i> and <i>Macaranga tanarius</i> . Further details are given in the individual LR descriptions.					
Within the Study Area of KTN NDA this LR includes woodlands in lowland areas in Ki Lun Shan, Kam Tsin, Pak Shek Au, Shek Tsai Leng, Tong Kok and Fu Tei Au.					
KLR-7.1	Kwu Tung South Road Lowland Woodland	High	Medium	Low	High
This LR refers to a small patch of woodland near the intersection of Kwu Tung Road and Kwu Tung South Road. It is associated with the residential buildings in the lowland area but has a similar plant species composition to the Ki Lun Shan Hillside vegetation. The dominant species include exotic species (<i>Acacia confusa</i> and <i>Leucaena leucocephala</i>) and native species (<i>Celtis sinensis</i> , <i>Cinnamomum camphora</i> and <i>Macaranga tanarius</i>).					
This LR is considered to be relatively mature and of high quality with relatively little capacity to tolerate change. The sensitivity of this LR is high .					
KLR-7.2	Lowland Woodland in the Vicinity of Kam Tsin	Medium	Medium	Low	High
This LR is found in several patches in the vicinity of Kam Tsin area, including the woodlands surrounding Casas Domingo and Ascot Park. Woodlands within this LR are in close proximity to residential and recreational areas and therefore potentially suffer disturbance from human activities lowering their quality. This LR also includes a small patch of Fung Shui woodland bordered by Kam Tsin road and Kam Tsin South Road to the west and Kam Tsin village to the east. It includes a number of large <i>Cinnamomum camphora</i> and <i>Dimocarpus longan</i> trees. Elsewhere the dominant species include both native (<i>Ficus microcarpa</i> , <i>Cinnamomum camphora</i> , <i>Macaranga tanarius</i> and <i>Celtis sinensis</i>) and exotic (<i>Acacia confusa</i> , <i>Acacia auriculiformis</i> , <i>Averrhoa carambola</i> , <i>Bombax ceiba</i> , <i>Leucaena leucocephala</i> and <i>Dimocarpus longan</i>) species.					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
This LR is relatively intolerant to change and its sensitivity is considered to be high .					
KLR-7.3	Lowland Woodland in Pak Shek Au and Tong Kok	High	Medium	Low	High
<p>This LR refers to the lowland woodlands at Pak Shek Au and Tong Kok, north of Fanling Highway. These woodlands are largely surrounded by adjacent industrial/open storage areas and therefore potentially suffer from disturbance by human activities. This LR also includes an old developed area west of Dills Corner that has now become completely overgrown with woodland.</p> <p>The trees in this woodland are of medium to large sizes, and are dominated by both native and exotic species. The most abundant native species include <i>Ficus microcarpa</i>, <i>Bischofia javanica</i>, <i>Cinnamomum camphora</i>, and <i>Macaranga tanarius</i>, while exotic species include <i>Acacia confusa</i>, <i>Bombax ceiba</i>, <i>Dimocarpus longan</i>, <i>Delonix regia</i>, <i>Averrhoa carambola</i>, <i>Casuarina equisetifolia</i>, <i>Chukrasia tabularis</i>, <i>Leucaena leucocephala</i> and <i>Spathodea campanulata</i>.</p> <p>This LR has a medium to high amenity value, a low capacity to tolerate change and its sensitivity is considered to be high.</p>					
KLR-7.4	Sheung Shui Water Treatment Works Lowland Woodland	Medium	Medium	Low	High
<p>This LR refers to a small isolated area of woodland on the periphery of Sheung Shui Water Treatment Works. The dominant tree species are medium to large in size and are native species such as <i>Celtis sinensis</i> and <i>Microcos paniculata</i>. Exotic species recorded in this woodland include <i>Acacia confusa</i>, <i>Casuarina equisetifolia</i>, <i>Melia azedarach</i> and <i>Acacia auriculiformis</i>.</p> <p>The quality of this LR is medium but it has little capacity to tolerate change and its sensitivity is considered to be high.</p>					
KLR-7.5	Vernon Pass Woodland	Medium	Medium	Medium	Medium
<p>This LR refers to a small patch of woodland patch at Vernon Pass to the north east of the Study Area. It contains some built structures and is generally disturbed by frequent human interaction. The dominant species in this LR include native species (<i>Ficus variegata</i> var. <i>chlorocarpa</i>, <i>Ficus hispida</i> and <i>Macaranga tanarius</i>) and exotic species (<i>Dimocarpus longan</i>).</p> <p>Due to its association with built structures and therefore not being in a totally natural state, this LR has a medium capacity to tolerate change and its sensitivity is considered to be medium.</p>					
<p style="text-align: center;">KLR 8 – Shrubland / Grassland Mosaic</p> <p>Refers to a mosaic of shrubland and grassland which is usually large in size and uniform in appearance. This LR is typical of the fire-maintained hill-slopes in Hong Kong and common species include grasses such as <i>Imperata koenigii</i>, <i>Neyraudia reynaudiana</i>, <i>Bidens alba</i>, <i>Panicum maximum</i> and <i>Miscanthus</i> spp., fern <i>Dicranopteris pedata</i> and shrubs <i>Baeckea frutescens</i>, <i>Breynia fruticosa</i>, <i>Litsea rotundifolia</i> var. <i>oblongifolia</i> and <i>Rhaphiolepis indica</i>.</p> <p>Within the Study Area of KTN NDA, this LR is found mainly on hillsides, particularly on the upper areas of Fung Kong Shan, Ki Lun Shan, Tai Shek Mo and its western foothill, and forms a large part of the Study Area. Further details are given in the individual LR descriptions.</p>					
KLR-8.1	Ki Lun Shan Shrubland/ Grassland Mosaic	Medium	Low	Medium	Medium
<p>This resource is located on the uplands of Ki Lun Shan and comprises a large area (approximately 20 ha). It borders woodlands at the foothills. It is one of the prominent landscape features in the southern KTN NDA Study Area and is maintained by periodical hill fires.</p> <p>This LR can re-establish itself fairly easily and is therefore considered to be relatively tolerant to change. Its sensitivity is medium.</p>					
KLR- 8.2	Fung Kong Shan Shrubland/Grassland Mosaic	Medium	Low	Medium	Medium
<p>This resource is located on the uphills of Fung Kong Shan. It borders some woodland at the foothills as well as rural development areas. It is maintained by periodical hill fires.</p> <p>This LR can re-establish itself fairly easily and is therefore considered to be relatively tolerant to change. Its sensitivity is medium.</p>					
KLR- 8.3	Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Ranges Foothills	Medium	Low	Medium	Medium
<p>This LR is an extensive area of shrubby grassland on the uplands of Tai Shek Mo and the foothills of the Western Ranges covering Ma Tso Lung. It largely merges into hillside woodland in at the foothills and is sometimes adjacent to some rural and urban development areas. Similar to the other hilly shrubland/grassland in Hong Kong, this LR is also maintained by periodical hill fires.</p> <p>This LR can re-establish itself fairly easily and is therefore considered to be relatively tolerant to change. Its sensitivity is medium.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLR-8.4	Shrubland/Grassland Mosaic along Sheung Yue River, Ng Tung River and Fanling Highway	Low	Low	High	Low
<p>These shrublands /grasslands are all located in lowland areas and in the vicinity of artificial resources such as channelized watercourses and highways. They are waste grounds through lack of maintenance and have been gradually colonized by weeds and climbers.</p> <p>This LR is of low landscape value and amenity and is relatively tolerant to change. Its sensitivity is low.</p>					
KLR-8.5	Fu Tei Au Shrubland/Grassland Mosaic	Low	Medium	High	Low
<p>This resource is located north of Fu Tei Au Road and is in the immediate vicinity of Sheung Shui Water Treatment Works. This LR is dominated by grasses such as <i>Miscanthus sinensis</i> and <i>Miscanthus floridulus</i> and some small trees including <i>Rhus succedanea</i> and <i>Macaranga tanarius</i> are also present.</p> <p>This LR is of low landscape value and amenity and is relatively tolerant to change. Its sensitivity is low.</p>					
KLR 9 - Agricultural Land					
<p>Refers to land used for agriculture including crops and orchards as well as ornamental plant nurseries. This LR contains a small number of structures such as small irrigation ponds, green houses, equipment sheds and small/ narrow hard paved areas. It not only contains agricultural vegetation but also some scattered non-agricultural vegetation including some shrubs and trees. It is often an intermediary between areas of development and natural areas.</p> <p>Within the Study Area of the KTN NDA, this LR is mainly found in Long Valley, Ho Sheung Heung, Shek Tsai Leng, Tong Kok and Tung Fong.</p>					
KLR-9.1	Long Valley Agricultural Land	High	High	Low	High
<p>This LR in Long Valley consists mainly of wet agriculture and includes both active and inactive fields. Common wetland crops in Long Valley include <i>Ipomoea aquatica</i> and <i>Nasturtium officinale</i>, with some fields cultivated with <i>Eleocharis dulcis</i>, <i>Oryza sativa</i> and <i>Trapa bispinosa</i>. Water lily (<i>Nymphaea</i> sp.) and Lotus (<i>Nelumbo nucifera</i>) are also cultivated in some ponds with shallow water. Dry land crops include <i>Aloe vera</i> var. <i>chinensis</i>, <i>Allium tuberosum</i>, <i>Brassica chinensis</i>, and <i>Lactuca sativa</i>. Fruit trees are present along field bunds including <i>Dimocarpus longan</i>, <i>Litchi chinensis</i> and <i>Magnifera indica</i>.</p> <p>This LR in Long Valley is of good quality and high significance in terms of crop production and being a large contiguous area of agriculture in Hong Kong. Although agricultural land per se is fairly easy to re-establish in the right environment, given the size of this LR and lack of similar areas in Hong Kong, it is relatively intolerant to change and its sensitivity is high.</p>					
KLR-9.2	Ho Sheung Heung Agricultural Land	High	Medium	Medium	Medium
<p>Ho Sheung Heung agricultural land is located to the northeast of Ho Sheung Heung village. This LR includes both active and inactive agricultural lands and shares high similarity in crop species composition with the adjacent Long Valley agricultural land. It is closely associated with the Long Valley agricultural land and also forms a fairly large continuous area, but not as large as the Long Valley area.</p> <p>This LR is of high value in terms of crop production similarly to Long Valley but being of a smaller contiguous area and with agricultural land being fairly easy to re-establish in the right environment, it has medium ability to accommodate change. Overall this LR sensitivity is medium.</p>					
KLR-9.3	Agricultural Lands in Shek Tsai Leng, Tong Kok and Fung Kong	Low	Low	Medium	Medium
<p>These agricultural lands scattered in the centre of the study area of KTN and are associated with the villages in Shek Tsai Leng, Tong Kok and Fung Kong, where they are surrounded by industrial or open storage areas. Most of the agricultural lands within this area are abandoned with weeds and invasive trees (e.g. <i>Leucaena leucocephala</i>) beginning to colonize the land and turning it to wasteland. In some locations, common vegetable plants, such as <i>Lactuca sativa</i>, are still found being cultivated in the small areas of farmland that are still active.</p> <p>This LR is mostly abandoned and does not have high value in terms of crop production but does provide some green space between the hard surfaces of industrial/open storage areas or rural development areas. Agricultural land is fairly easy to re-establish in the right environment, and is relatively tolerant to change but given the greening element amongst an area where there is a lot of industrial/ open storage, overall this LR is considered to have medium sensitivity.</p>					
KLR-9.4	Other Agricultural Lands in KTN	Medium	Medium	Medium	Medium
<p>This LR refers to several small and fragmented agricultural lands in different locations within the study area of KTN, including Chau Tau Tsuen, Pak Shek Au, Yin Kong, Kam Tsin and Tai Tau Leng. Most of these agricultural lands have been wholly or partly abandoned and grass and shrubs now grow in the fields. For those fields remaining active, common crops cultivated by farmers include <i>Brassica parachinensis</i> and <i>Lactuca sativa</i>.</p> <p>This LR has low to medium value in terms of crop production and is relatively tolerant to change. It is considered to have medium sensitivity.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLR-9.5	Other Orchards Areas in KTN	Medium	Medium	Medium	Medium
<p>This LR refers to several small and fragmented orchard areas in different locations within the study area of KTN, including around the Ma Tso Lung area, on the lower slopes of Fung Kong Shan, and near Ngam Pin. Common fruit trees in this LR include <i>Musa x paradisiaca</i>, <i>Artocarpus macrocarpon</i>, <i>Mangifera indica</i> and <i>Dimocarpus longan</i>, where the fruit trees present include <i>Artocarpus macrocarpon</i>, <i>Dimocarpus longan</i> and <i>Carica papaya</i>. Not all these orchard areas are still well looked after and some have been left untreated for a while.</p> <p>This LR has medium value in terms of crop production and being agricultural is relatively tolerant to change although trees generally take longer to grow and produce fruit than crops take to be harvestable, so ability to accommodate change is medium. Overall this LR is considered to have medium sensitivity.</p>					
<p align="center">KLR 10 - Open Space / Recreation Area</p> <p>Refers to areas that provide recreational use either in the form of playground areas, sports pitches, passive recreation parks or sitting out spaces. There is vegetation associated with this LR, particularly within golf courses where there is maintained grass on the greens, as well as many landscaped trees and some shrubs.</p> <p>Within the Study Area of the KTN NDA, this LR is found at Hong Kong Golf Club, Sheung Shui Community Sports and Lo Wu Saddle Club.</p>					
KLR-10.1	Hong Kong Golf Club	High	Medium	High	Medium
<p>Hong Kong Golf Club is located either side of Fan Kam Road. It is a large private golf club with extensive greens maintained for golfing activities. Besides the golf course, the club has some built structures including the Club House and facilities to accommodate swimming and tennis, as well as restaurants and accommodation. The Half Way House at Hong Kong Golf Club is a Grade 3 historic building.</p> <p>Trees, dominated by <i>Melaleuca quinquenervia</i>, are planted around the golf course for landscaping purposes. Water lilies (<i>Nymphaea</i> spp.) are cultivated in the golf course ponds. The entire plantation is well maintained and in good condition.</p> <p>This LR is of high quality and amenity value and covers an extensive area of land; however it is an artificial resource and has a high capacity to accommodate change. Its sensitivity is considered to be medium.</p>					
KLR-10.2	Sheung Shui Community Sports	Medium	Medium	High	Medium
<p>Sheung Shui Community Sports is located near Ma Tso Lung Road. It is a multi-sport centre with both outdoor and indoor facilities such as a basketball court, grass football pitch, campsite and clubhouse etc. Trees are planted within this sport centre and include <i>Michelia x alba</i>, <i>Psidium guajava</i>, <i>Dimocarpus longan</i> and <i>Mangifera indica</i>.</p> <p>This LR has medium landscape value and due to its man-made nature has a high capacity to accommodate change. Its sensitivity is considered to be medium</p>					
KLR-10.3	Lo Wu Saddle Club	Medium	Medium	Medium	Medium
<p>Situated along Ho Sheung Heung Road, Lo Wu Saddle Club has more than 50 years of history and has a stable complex including grass riding arenas as well as clubhouse facilities and a schooling arena. Trees found within this LR include <i>Melia azedarach</i>, <i>Celtis sinensis</i> and <i>Delonix regia</i>.</p> <p>This LR is of relatively high quality and amenity value. The artificial elements can accommodate change relatively easily but the fields where horses graze are less able to accommodate change. Overall this LR's sensitivity is considered to be medium.</p>					
<p align="center">KLR 11 – Urban Development Area</p> <p>Refers to urbanized areas which are heavily developed with considerable hard paved surfaces and limited landscaped areas. These LR's consist mainly of large clusters of medium to high density buildings with a high degree of related infrastructure and often with some high rise developments, with some associated facilities such as post office, police station, hospital, restaurants, supermarkets etc. The LR also includes work sites where construction is ongoing, or sites being cleared/ formed prior to development of a structure that would form part of an urban area. Vegetation in this LR is mainly landscape planting with scattered amenity shrubs and trees and some small public green spaces and private gardens.</p> <p>Within the Study Area of the KTN NDA, it includes Lo Wu Correctional Institute and the existing formation site for the proposed Kwu Tung MTRC Station.</p>					
KLR-11.1	Lo Wu Correctional Institution	Low	Low	High	Low
<p>Lo Wu Correctional Institution was opened in 2010 and is located in between of the Ho Sheung Heung Road and Tai Shek Mo foothills. Buildings in this LR are medium-rise and roads are all hard-paved. Tree planting is limited within the institution although it does have some green roofs.</p> <p>This LR has a high ability to accommodate change due to its artificial nature and is considered to have low sensitivity.</p>					
KLR-11.2	Existing formation site for proposed Kwu Tung MTRC Station	Low	Low	High	Low
<p>This site for the proposed Kwu Tung MTRC Station is located near Po Lau Road and is currently being formed prior to constructing a new MTR Station that would form part of an urban area. Trees present in this area include native species such as <i>Macaranga tanarius</i> and exotic species such as <i>Dimocarpus longan</i>, <i>Melia azedarach</i> and <i>Bauhinia variegata</i>.</p> <p>This LR is undergoing site clearance, is of low landscape value and can accommodate change easily. Its sensitivity is considered to be low.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLR 12 – Rural Development Area					
Refers to traditional villages, modern villages and small scale, low rise residential areas of lower density dominated by domestic structures (mainly of 2-3 stories) interwoven with roads and paths, but limited other infrastructure. There are some Ancestral Halls, shrines and temples, and this LR may also contain limited facilities such as small police stations, post offices, and covered water reservoirs and pumping stations and some small, managed, recreational areas (such as football and basket ball pitches) and small wasteland areas either wholly or partly covered by weedy or sparse vegetation. This LR often has small orchard areas associated with it (most commonly planted fruit tree species are <i>Dimocarpus longan</i> , <i>Litchi chinensis</i> , <i>Clausena lansium</i> , <i>Mangifera indica</i> and <i>Citrus maxima</i>) and private gardens, as well as amenity planting among the built structures. This LR usually occurs in fragmented patches with agricultural or natural landscape resources adjacent to it.					
Within the Study Area of the KTN NDA this LR is mainly found in Ho Sheung Heung, Long Valley, Ngam Pin, along Fanling Highway, as well as in the central area of Kwu Tung. This LR also includes a water reservoir and rifle range.					
KLR-12.1	Ho Sheung Heung Rural Development Area	Medium	Medium	Low	Medium
Ho Sheung Heung village is bounded by Ho Sheung Heung Pai Fung Road and Chung Kuk Path. In the vicinity (but not part of this LR), there is Ho Sheung Heung Fung Shui Woodland and agricultural land in which water ponds are scattered. Although the village could be classified as relatively modern due to the fact many houses have been replaced by modern housing blocks of 2-3 storeys, some of the residential houses are identified as Historic Buildings (refer to Chapter 11), with Hau Kui Shek Ancestral Hall, a Declared Monument, located on the middle of the village and two Grade 3 listed buildings, Hung Shing Temple & Pat Fung Temple and ‘Sin Wai Nunnery’ located in the south of the village . The whole village is mostly hard-surfaced and has limited softscape treatment but does include some trees (e.g. <i>Dimocarpus longan</i> , <i>Litchi chinensis</i> and <i>Clausena lansium</i>) and private amenity planting (e.g. <i>Plumeria rubra</i> and <i>Thuja orientalis</i>).					
Although most of the houses in Ho Sheung Heung Village are relatively modern, the ancestral hall and graded historic buildings are vulnerable to change since they cannot be easily recreated and overall this LR has medium sensitivity.					
KLR-12.2	Rural Development Area in Long Valley, Yin Kong, Tsung Pak Long and Hakka Wai	Medium	High	Low	High
This LR lies between the Shek Sheung River and Fanling Highway to the southeast of Long Valley. It covers three villages: Yin Kong Tsuen, Hakka Wai and Tsung Pak Long.					
Yin Kong Tsuen is a traditional village undergoing transformation. Some of the existing residential houses in the northern part of the village are identified as historical buildings. Earth shrines associated with Fung Shui Trees (<i>Ficus microcarpa</i> in most cases) are present including the Grade 2 listed Earth God Shrine of Kam Tsin. In addition an old western styled Enchi Lodge (Grade 2 historic building) is located on the southern part of the village. Between the northern and southern parts of the village there is grassland which would have been agricultural land in the past. On the other hand, the modern aspect of Yin Kong Tsuen is presented by many well-established modern village houses as well as facilities such as small-scaled playgrounds.					
Hakka Wai is a traditional compound with around 100 years of history. It consists of two rows of residences, an ancestral hall (the Wong Shek Chung Ancestral Hall), a study hall, an entrance gate, enclosing walls and a watch tower. This compound is a Grade 1 historic building.					
Tsung Pak Long is a traditional village undergoing transformation. It contains ancestral halls, earth shrines, a school and a church in traditional style to its northwest. Most areas within this LR are hard-surfaced and have limited vegetation except those private amenity plantings, in which fruit trees <i>Dimocarpus longan</i> , <i>Carica papaya</i> and <i>Citrus reticulata</i> and landscaping shrub <i>Duranta erecta</i> and <i>Murraya paniculata</i> are commonly found.					
The historic buildings located in this LR, particularly the relatively large area of Hakka Wai, cannot be easily recreated and this LR is relatively intolerant to change. Overall it is considered to have high sensitivity.					
KLR-12.3	Rural Development Area in Ngam Pin	Medium	Medium	Medium	Medium
This LR is just located within the Closed Area. Structures in the village are old and simple with most of the residential buildings consisting of iron structures. Tall grasses grow along the roads winding between houses without management and much of the area is abandoned with a large degree of vegetation which make it less able to accommodate change.					
This LR is considered to have medium sensitivity.					
KLR-12.4	Rural Development Area to the East of MTRC East Railway Line	Medium	Medium	Low	Medium
This LR covers a part of Wai Loi Tsuen, as well as settlements between Fu Tei Au Road and Ng Tung River. Wai Loi Tsuen is clearly demarcated by a channelized watercourse (i.e. moat) connected with the Shek Sheung River.					
Although some of the houses in this village have been replaced by modern housing blocks of 2-3 storeys, it is still a relatively traditional village and contains temples and Ancestral Halls. South of Fu Tei Au Road there is an orchard with a water pond in the middle and fruit trees in this orchard include <i>Clausena lansium</i> , <i>Dimocarpus longan</i> , <i>Litchi chinensis</i> , <i>Citrus maxima</i> and <i>Musa x paradisiaca</i> .					
This LR is relatively intolerant to change due to historical buildings and this LR has medium sensitivity.					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLR – 12.5	Rural Development Area to the North of Hong Kong Golf Club	Medium	Low	High	Low
<p>This LR mainly covers one modern village, Golf Parkview, consisting of residential 4-5 storey blocks enclosed by walls but also includes some buildings and associated landscaped area in the middle of a plantation area. Golf Parkview is fairly new and being a man-made structure has a reasonable capacity to accommodate change despite some significant landscaping. The buildings within the plantation make up Oi Yuen Villa, Lot No. SSL 2RP and is currently (May 2013) proposed as a Grade 1 historic building.</p> <p>Overall since the historic building grading is not confirmed to date, this LR is considered to have low sensitivity.</p>					
KLR-12.6	Kam Tsin Rural Development Area	Medium	Low	Medium	Medium
<p>This LR refers to the rural area around Kam Tsin located at the south east of the KTN NDA. It covers a number of well established villages and developments, including Kam Tsin Tsuen, The Royal Oaks, Ascot Park and Casas Domingo. It also contains community facilities such as kindergarten and schools. Planted trees are found between village houses and some grow naturally along the edge of the roads and villages.</p> <p>Trees commonly found in this LR include both native (e.g. <i>Bauhinia blakeana</i>, <i>Celtis sinensis</i> and <i>Bischofia javanica</i>) and exotic (e.g. <i>Melaleuca quinquenervia</i> as well as some fruit trees such as <i>Dimocarpus longan</i> and <i>Psidium guajava</i>) species.</p> <p>Overall, this LR is dominated by domestic residencies, its landscape amenity, significance and quality is moderate and it has a medium ability to tolerate change due to the vegetation within the LR, making its overall sensitivity medium.</p>					
KLR-12.7	Kwu Tung Fresh Water Service Reservoir	Low	Low	High	Low
<p>Kwu Tung Fresh Water Service Reservoir is a permanent structure located on Ki Lun Shan for the purpose of fresh water storage. This area is hard-paved and covered with a grass roof but with limited vegetation otherwise.</p> <p>Due to its low landscape value and high ability to accommodate change, it has low sensitivity.</p>					
KLR-12.8	Rural Development Area of Europa Garden and Valais	Low	Low	High	Low
<p>This LR lies south of Fanling Highway and west of Sheung Yue River. The groups of houses in this LR are low-rise private residential buildings of 2-3 stories. Trees are present both in the public areas such as roads (e.g. <i>Acacia confusa</i>, <i>Casuarina equisetifolia</i> and <i>Thevetia peruviana</i>) and within the private gardens where <i>Dimocarpus longan</i> and <i>Averrhoa carambola</i> as well as some palm trees that are cultivated. This LR also contains one historic graded building, the Grade 2 listed Lady Ho Tung Welfare Centre (Main Block and Bungalow) (See Chapter 11 for more details)</p> <p>Most components within this LR are man-made structures and are tolerant to change. The exception is the Grade 2 listed historic building, but since this forms a very small proportion the LR, overall its sensitivity is considered to be low.</p>					
KLR-12.9	Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang	Medium	Medium	Medium	Medium
<p>Rural area in Shek Tsai Leng mainly includes Dills Corner Garden and its associated facilities. Dills Corner Garden is located along Po Lau Road and is a home for the aged. It contains several rows of 2-storey houses and is enclosed by fences. Except for several individual, large trees along the fences (mostly <i>Ficus microcarpa</i>), this area is almost entirely hard-surfaced with limited landscaping. Nevertheless, well maintained trees are planted along the roads in this area and dominant species include <i>Acacia confusa</i> and <i>Melaleuca quinquenervia</i>. There is also a soccer pitch, playground and school in this area.</p> <p>The rural area in Tong Kok, Fung Kong and Tit Hang contains loosely grouped village houses in traditional style, with some graves of Hau clan scattered in the northern part of Fung Kong Tsuen. All the villages are mostly hard-surfaced with small houses and winding paths and have limited softscape treatment but do include some abandoned fruit trees (e.g. <i>Dimocarpus longan</i>, <i>Citrus maxima</i>, <i>Musa x paradisiaca</i> and <i>Clausena lansium</i>) and private amenity planting.</p> <p>This is a LR with a medium capacity to tolerate change and its sensitivity is considered to be medium.</p>					
KLR-12.10	Lo Wu Rifle Range	Medium	Medium	Medium	Medium
<p>Lo Wu Rifle Range is located between Fung Kong Shan and the Tai Shek Mo mountain. It is a large piece of grassland for police's training. Many mature trees grow naturally in the surroundings, including <i>Bauhinia blakeana</i>, <i>Macaranga tanarius</i>, <i>Celtis sinensis</i> and <i>Leucaena leucocephala</i>.</p> <p>This LR is a man made area but it is green land not hard surface and so has a medium tolerance to change. The sensitivity of this LR is medium.</p>					
KLR-12.11	Rural Development Area in Ma Tso Lung	Low to Medium	Medium	Low	Medium
<p>This LR refers to the rural area at Ma Tso Lung on the northwest of the KTN NDA Study Area. It mainly covers two villages, i.e. Ma Tso Lung San Tsuen and Shun Yee San Tsuen, which are relatively small, mainly consisting of more traditional houses of a single storey. Trees associated with this area include some fruit trees such as <i>Diospyros kaki</i>, <i>Musa x paradisiaca</i> and <i>Dimocarpus longan</i> as well as other native and exotic trees such as <i>Bauhinia blakeana</i>, <i>Leucaena leucocephala</i>, and <i>Bombax ceiba</i>.</p> <p>Although these structures cannot be recreated easily and have low ability to accommodate change, their landscape quality and maturity are not high and overall this LR has medium sensitivity.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLR-12.12	Fanling Lodge	High	Medium	Medium	Medium
<p>Fanling Lodge is a two storey house in a wooded lot within the Hong Kong Golf Club off Castle Peak Road - Kwu Tung with a helicopter pad on the lawn of the landscaped gardens. Trees and shrubs planted for landscaping purpose include <i>Magnolia grandiflora</i>, <i>Melaleuca quinquenervia</i>, <i>Eucalyptus citriodora</i>, <i>Livistona chinensis</i> and <i>Bougainvillea spectabilis</i>.</p> <p>This LR has cultural significance but being man-made still has a reasonable capacity to accommodate change and is considered to have medium sensitivity.</p>					
<p style="text-align: center;">KLR 13 - Industrial / Open Storage</p> <p>Refers to areas which are heavily adapted for human industrial use, such as factory facilities, waste processing plants and other industrial buildings, often with some open areas for storage, parking or other associated activities. These areas have small roads within them and some concrete drainage channels. There is very little existing vegetation within this LR.</p> <p>Within the Study Area of KTN NDA, this LR is mainly found in areas adjacent to villages and main roads, such as Yin Kong industrial / open storage, Shek Tsai Leng, Tong Kok and Fung Kong open storage and Pak Shek Au open storage. It also includes Sheung Shui Slaughter House, Sheung Shui Water Treatment Works and Shek Wu Hui Sewage Treatment Works. This LR can also be found at the foothill of more natural LRs, often on flatter land and includes Ki Lung Shan Foothill industrial / open storage.</p>					
KLR-13.1	Sheung Shui Industrial Area	Low	Low	High	Low
<p>This LR is located along the east boundary of the KTN NDA Study Area and is part of Sheung Shui industrial area. It contains Sheung Shui Water Treatment Works, Sheung Shui Slaughter House, Shek Wu Hui Sewage Treatment Works as well as several warehouses and industrial buildings. Planted trees are found along the roads and dominant species include <i>Acacia auriculiformis</i>, <i>Acacia confusa</i> and <i>Leucaena leucocephala</i>.</p> <p>This LR has relatively low landscape amenity value and consists mostly of modern man-made structures that can be easily recreated. Its sensitivity is considered to be low.</p>					
KLR-13.2	Industrial / Open Storage Area in Yin Kong	Low	Low	High	Low
<p>This is an isolated plot beside Yin Kong Tsuen and is now mainly used for open storage and car park. Trees growing within this LR include <i>Macaranga tanarius</i>, <i>Ficus microcarpa</i>, <i>Celtis sinensis</i>, <i>Araucaria heterophylla</i>, <i>Carica papaya</i>, <i>Artocarpus macrocarpon</i> and <i>Syzygium jambos</i>.</p> <p>This LR predominantly consists of man made structures which have a high capacity to tolerate change and have low landscape value. This LR is considered to have low sensitivity.</p>					
KLR-13.3	Industrial/Open Storage in Shek Tsai Leng, Tong Kok and Fung Kong	Low	Low	Medium	Low
<p>This LR is located around the villages of Shek Tsai Leng, Fung Kong, Tung Fong and Tong Kok and is generally in the middle of the KTN NDA Study Area. This continuous area is largely used for open storage and car parks and has a network of small road running within it, some with associated concrete drainage channels. It also has several waste processing plants within this LR. In addition, this LR has two graded historic buildings, one just west of where the Sheung Yue River flows under Fanling Highway (Yeung Yuen Grade 3 listed building) and one in Shek Tsai Leng (Yan Wah Lo Grade 3 listed building). (Further details can be found in Chapter 11).</p> <p>Trees within this LR are not actively managed and grasses occupy many places between the car parks. Tree species commonly found in the area include <i>Macaranga tanarius</i>, <i>Celtis sinensis</i>, <i>Bauhinia blakeana</i>, <i>Mallotus paniculatus</i>, <i>Ficus microcarpa</i>, <i>Acacia confusa</i>, <i>Casuarina equisetifolia</i>, <i>Leucaena leucocephala</i>, <i>Hibiscus tiliaceus</i>, <i>Dimocarpus longan</i>, <i>Livistona chinensis</i>, <i>Morus alba</i>, <i>Psidium guajava</i> and <i>Artocarpus macrocarpon</i>.</p> <p>This LR predominantly consists of man made structures which have a high capacity to tolerate change and have low landscape value. The exceptions are the two graded historic buildings which have low ability to change and are rarer, but since they form a very small part of this LR, overall it is considered to have low sensitivity.</p>					
KLR-13.4	Industrial/Open Storage in Pak Shek Au, Chau Tau and Foothill of Ki Lun Shan	Low	Low	High	Low
<p>This LR refers to a lowland area surrounded by woods on southwest of the KTN NDA Study Area. It contained factories, open storage and car park areas. Due to the lack of routine management, grasses and climbers have occupied many places and trees found in this area include <i>Macaranga tanarius</i>, <i>Celtis sinensis</i>, <i>Dimocarpus longan</i>, <i>Leucaena leucocephala</i> and <i>Bombax ceiba</i>.</p> <p>This LR predominantly consists of man made structures of little landscape value which have a high capacity to tolerate change. This LR is considered to have low sensitivity.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLR 14 – Major Transportation Corridor					
Refers to Fanling Highway running west-east along the south of the Study Area, all the associated major intersections and key adjacent roads including Castle Peak Road. There is tree planting along the sides of the roads consisting of a variety of indigenous and exotic species. In addition, there is some planting along the central divider (median) in some sections, including of amenity shrubs. Drainage channels associated with the roads/highway are considered part of this LR as they are an integral function of the roadscape. Within the study area of KTN NDA, major transportation corridor also includes the MTRC East Rail. Within the KTN NDA Study Area, the roadside vegetation associated with this LR also includes five OVTs as detailed in the plantation LR, KLR-5.4.					
KLR- 14.1	Fanling Highway and nearby associated roads	Medium	Medium	Medium	Medium
This LR is includes the Fanling Highway (Kwu Tung section), Castle Peak Road running parallel and nearby associated roads, which are the major transportation routes connecting Kwu Tung to its adjacent areas. The roads run west-east along the south of the Study Area and there are areas of established roadside planting along the sides of the roads as well as in the central divider (median) in some sections, including of amenity shrubs. In addition along parts of the roads, there are open drainage channels lined by the roadside planting. Trees commonly used for roadside planting in this area include <i>Melaleuca quinquenervia</i> , <i>Bombax ceiba</i> , <i>Ficus microcarpa</i> , <i>Casuarina equisetifolia</i> , <i>Acacia confusa</i> and <i>Bauhinia blakeana</i> . Despite being a man-made resource, the landscape value of this LR is increased by the significant roadside planting (in which several individual OVTs are present but considered separately. See KLR-5.4) and its sensitivity is raised to medium .					
KLR- 14.2	MTRC East Rail (to/from Lo Wu)	Low	Low	High	Low
This LR mainly refers to the MTRC East Railway leading to Lo Wu Station running south-north. The Lok Ma Chau Spur Line running west-east is underground. No significant planting is found along the railways and trees growing randomly in its vicinity are dominated by <i>Leucaena leucocephala</i> . This resource is highly utilized and well linked but it is man-made with low landscape value and a high ability to accommodate change. Its sensitivity is low .					

The baseline LCAs of KTN NDA are listed in **Table 12.6.2** and mapped in **Figure 12.7.0 (key plan)** and **Figures 12.7.1-8 (zoom ins)**. Illustrative photographs of the LCAs are presented in **Figures 12.7.9-10**.

Table 12.6.2 - Landscape Character Areas and their Sensitivity – KTN NDA

Id No.	Landscape Character Area (LCA)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLCA-1	Natural Hillside Landscape	High	High	Low	High
<p>Refers to large hillside areas which are dominated by shrubland, grassland and some woodland in places.</p> <p>Within the Study Area for KTN NDA this LCA encompasses Tai Shek Mo (183 mPD), Western Range of Tai Shek Mo (Ma Tso Lung and Lok Ma Chau) (144 mPD), Ki Lun Shan (222 mPD), and Fung Kong Shan (40 mPD).</p> <p>Tai Shek Mo lies to the north of the Study Area. The primary ridgeline extends southward while the Western Range ridgeline runs approximately NE-SW, covering Ma Tso Lung and Lok Ma Chau. These two sections of LCA are separated by lower land and to their south the smaller Fung Kong Shan is found.</p> <p>Ki Lun Shan lies to the southwest of the Study Area.</p> <p>This landscape area is natural and has high landscape quality. Its significance is also high and it is not capable of tolerating change. Therefore its sensitivity is considered to be high.</p>					
KLCA-2	Rural and Urban Peripheral Village Landscape	Medium	Low	Medium	Medium
<p>Refers to rural village areas and village areas on the fringes of urban developments, including relic landscapes of former villages. This LCA is dominated by small or medium sized villages with modern and traditional houses and some Ancestral Halls, interspersed with small agricultural plots and comprises a broad mix of other land uses including water ponds, schools, sports grounds, and playgrounds, some open storage areas and car parks, and a golf course to the southeast of Kwu Tung. This LCA also has some small patches of woodland as well as vegetation associated with the villages and park areas.</p> <p>Within the Study Area for KTN NDA this LCA can be mainly divided into five districts at Lo Wu, Ma Tso Lung and Pak Shek Au on the west, Kwu Tung in the middle, Kam Tsin and Sheung Shui Heung on the east. Some of the villages in this LCA are located at foothill areas, including Ho Sheung Heung, Ma Tso Lung Shun Yee San Tsuen and Pak Shek Au, while some other villages are located in lowland areas, such as Tsung Pak Long, Tong Kok and Shek Tsai Leng.</p> <p>This LCA is considered to have medium tolerance to change and moderate amenity value. Its sensitivity is therefore medium.</p>					
KLCA-3	Urban Development Landscape	Low	Medium	High	Low
<p>Refers to urban areas with significant numbers of high rise developments and extensive transport infrastructure. It also contains hospital, car parks and open areas associated with urban development such as playgrounds and small parks and sitting out areas. This LCA has little if any natural vegetation but does include some man-made landscaping.</p> <p>Within the Study Area for KTN NDA this LCA is found only in the northeast i.e. Lo Wu Correctional Institution.</p> <p>This is an urban development landscape and has reasonable tolerance to change. The sensitivity of this LCA is considered to be low.</p>					
KLCA-4	Industrial Landscape	Low	Low	High	Low
<p>Refers to areas comprising a broad mix of land uses including factories, utility facilities, workshops, open storage and some channelized water courses. It is normally located on low lying ground or at the base of hills and may include small and fragmented areas of residential houses and their associated agricultural land. There is little significant vegetation among this built environment, but small patches of vegetation do exist, particularly along the channelized river.</p> <p>Within the Study Area for KTN NDA this LCA is found to the west near the San Tin Interchange, in the east at the Shek Sheung River and the area east of this river, and more centrally bordering Ma Tso Lung Road, Shek Tsai Leng and east of Fung Kong Shan.</p> <p>This LCA usually contains abandoned facilities that are able to accommodate change. Except for the significant planting along Ng Tung River, most areas in this LCA have little vegetation, resulting in a low landscape amenity. Therefore, its sensitivity is considered to be low.</p>					
KLCA-5	Lowland Agricultural Landscape	High	Medium	Low	High
<p>Refers to large areas dominated by cultivated land with scattered small villages and low-rise buildings and may also include some fishponds and irrigation ponds. This LCA is mostly found among lowlands and floodplain areas.</p> <p>Within the Study Area for KTN NDA the key area of this LCA is found at Long Valley which is a highly sensitive LR in itself. And there are also some isolated farmlands at Chau Tau and Ma Tso Lung. Tree vegetation is generally sparse and restricted to field boundaries, adjacent to local houses and, together with bamboo, along the banks of Sheung Yue River.</p> <p>The value and significance of the LCA is high, largely due to it encompassing the high quality, contiguous agricultural land of the core Long Valley area. It has little tolerance to change and its sensitivity is considered to be high.</p>					
KLCA-6	Major Transportation Corridor Landscape	Medium	Medium	Medium	Medium
<p>Refers to major highway and railway areas, with their scattered associated buildings and associated planting.</p> <p>Within the Study Area for KTN NDA, Fanling Highway and its nearby associated roads (such as Castle Peak Road) are the major transport routes stretching in an east west direction located at the south boundary of KTN NDA. There are two key connection junctions at Fan Kam Road to the east and San Sham Road to the west. In addition, the MTRC East Rail leading to the Lo Wu Station runs south-north in the east of the study area. Lok Ma Chau Spur Line branches off from Sheung Shui Railway Station to Lok Ma Chau Station, of which this section is underground passing through KTN NDA. The Fanling Highway (Kwu Tung section) and Castle Peak Road running parallel have considerable areas of established roadside planting, including five OVTs, which provide significant greening to the LCA. Due to the considerable associated planting, this LCA resource is considered to be less tolerant to change than simple highway/railway and its sensitivity is medium.</p>					

Id No.	Landscape Character Area (LCA)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLCA-7	Major Water Course Corridor Landscape	Medium	High	Medium	Medium
Refers to modified water courses channelized with concrete or grasscrete and also includes the vegetation associated with the water course, both within the channel and along the banks as well as in the ridge of the banks. Within the Study Area of KTN NDA this LR includes Ng Tung River, Sheung Yue River and Shek Sheung River. The landscape amenity and significance of this LCA are medium. Due to its partially artificial state, it is relatively tolerant to change and its sensitivity is considered to be medium .					

12.6.3 Fanling North (FLN) NDA

The baseline LR of FLN NDA, are detailed along with their sensitivity in **Table 12.6.3** and mapped in **Figure 12.6.0 (key plan)** and **Figures 12.6.1-7 (zoom ins)**. Illustrative photographs of the LR are presented in **Figures 12.6.8-17**.

The baseline LCAs of FLN NDA are listed in **Table 12.6.4** and mapped in **Figures 12.8.0 (key plan)** and **Figures 12.8.1-7 (zoom ins)**. Illustrative photographs of the LCAs are presented in **Figures 12.8.8-9**

LRs of higher sensitivity are generally natural streams, woodland, marsh/wetland, some water ponds, although other resources may also have high sensitivity due to certain characteristics. For FLN NDA key LR are summarized below.

LRs associated with natural water bodies are often considered higher value resources. With the exception of a semi-natural stream in Tin Ping Shan Agricultural Land (FLR2.1) which is generally degraded by pollution and has some banks fortified with concrete, and a natural stream at Cham Shan (FLR-2.2) which has banks partially paved in places and low water (quality commonly polluted with rubbish), the natural streams in FLN (at Lung Shan (FLR-2.3) and Siu Hang San Tsuen (FLR-2.4)) have high sensitivity, largely due to their low ability to accommodate change. Two pond areas which are relatively intolerant to change, those at Ho Sheung Heung and Long Valley (FLR-3.1) and within the Closed Area (FLR-3.2), are considered to have high sensitivity. In addition, all the marsh/wetland areas in FLN NDA, including those in Long Valley and near Tsung Yeun (FLR-4.1), and the mitigation wetland along Ng Tung and Sheung Yue River (FLR-4.2), are all rated as highly sensitive largely due to being rare resources and being intolerant to change.

Given the nature of trees as a precious landscape resource, all areas of hillside woodland within the FLN NDA are rated as having high sensitivity. Unlike KTN NDA, the lowland woodland around FLN NDA is generally of low to medium quality with more human disturbance and only the lowland woodland at Sacred Hill (FLR-7.4) and at Ling Hill/Ling Shan Tsuen (FLR-7.5) are considered to have high sensitivity as they are of better quality and less able to accommodate change. There are no OVTs in this area but one area of plantation (at Ha Pak Tsuen (FLR-5.2)) is considered to have high sensitivity due to the fact that it is mature and the area now has many large trees in a traditional village setting, giving it a low ability to accommodate change.

While most agricultural LR have medium sensitivity (given it is relatively easy to create in the right environment and not being rare in the New Territories), the agricultural land in Long Valley is unique as it forms part of a large, high quality, contiguous area which would be difficult to recreate in Hong Kong due its characteristics and a lack of similar areas. This agricultural land in Ho Sheung Heung and Long Valley (FLR-9.1) to the north west of the FLN NDA Study Area is therefore recognized as having high sensitivity.

With regards to LCAs, Natural Hillside Landscape in FLN NDA (FLCA-1) is considered highly sensitive, largely due to its high landscape quality and inability to accommodate change. Rural and Urban Peripheral Village Landscape (FLCA-2) and Major Water Course Corridor Landscape (FLCA-7) have medium sensitivity, largely due to their moderate amenity value and medium tolerance to change. The Lowland Agricultural Landscape in this area (FLCA-2) is predominantly of medium value and considered reasonably easy to recreate given the right environment, and therefore also has medium sensitivity. The Major Transport Corridor Landscape in this area (FLCA-6) includes the southern Fanling Highway and part of the MTRC. Unlike in the KTN area, there is limited planting within this LCA in FLN NDA so it has a high ability to accommodate change and therefore this LCA has low sensitivity. Urban Development Landscape (FLCA-3) and Industrial Landscape (FLCA-4) also have low sensitivity due to their low landscape quality and high ability to accommodate change.

Table 12.6.3 - Landscape Resources and their Sensitivity- FLN NDA (Refer to Figure 12.6.0 (key plan) and Figures 12.6.1-7 (zoom ins))					
Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR 1 – Channelized Water Course					
Refers to modified water courses channelized with concrete or grasscrete, or with gabion-fortified banks, water courses undergoing such channelization. This LR includes both large channelized river water courses as well as some much smaller concrete lined water courses associated with agricultural land. This LR also includes some walkways along the larger water course and the vegetation associated with the water course, both within the channel and along the banks as well as the ridge of the banks. The vegetation mainly consists of grasses and shrubs, but also includes trees in some areas as detailed further in the individual LR descriptions.					
Within the Study Area of FLN NDA this LR includes sections of Ng Tung River, Shek Sheung River, Sheung Yue River and Ma Wat River and is one of the prominent landscape features running across a large part of the Study Area.					
FLR-1.1	Ng Tung River (Fanling District)	Medium	Medium	Medium	Medium
Ng Tung River (Fanling District) runs in an east-west direction in the FLN NDA Study Area. It collects water from Ma Wat River in the east, then Shek Sheung River and Sheung Yue River further west and finally empties into the Shenzhen River far outside the study area. Ng Tung River is modified with grasscrete banks and tree planting is found in its immediate vicinity. Dominant plantation tree species are <i>Acacia auriculiformis</i> and <i>Acacia confusa</i> . Other trees also recorded include <i>Ficus virens</i> and <i>Leucaena leucocephala</i> . The river also includes a nullah in the south of the Study Area and some small channels linking through culverts under the banks of the main channel to smaller channelized watercourses which connect to drainage systems and sometimes to more natural watercourses.					
This resource is reasonably tolerant to change and its sensitivity is medium .					
FLR-1.2	Shek Sheung River	Medium	Medium	Medium	Medium
Shek Sheung River collects water from the south and flows north, joining the Sheung Yue River west of the Sheung Shui Slaughter House. There is another branch of Shek Sheung River that splits from Ng Tung River and flows round the south of the Shek Wu Hui Sewage Treatment Works. Water drained from Tin Ping San Tsuen low land area flows into this branch after passing through a floodwater storage area. This LR is mainly a grasscrete banked, trapezoidal channel, formed for the purpose of flood protection of the Fanling and Kwu Tung areas. Water partially dries out during the dry season and there is only a small amount of water at the base of the channel, with grass on either side. There are grasses and shrubs along the river's embankment also, as well as trees planted along both sides in many sections of the river. The dominant tree species are exotic, including <i>Acacia auriculiformis</i> , <i>Acacia confusa</i> , <i>Eucalyptus</i> spp. and <i>Leucaena leucocephala</i> . Native trees of lower abundance can also be found, e.g. <i>Celtis sinensis</i> , <i>Cinnamomum camphora</i> , <i>Cleistocalyx operculatus</i> , <i>Ficus microcarpa</i> , <i>Ficus virens</i> and <i>Sapium sebiferum</i> .					
Overall this river is relatively tolerant to change and its sensitivity is considered to be medium .					
FLR-1.3	Sheung Yue River	Medium	Medium	Medium	Medium
The Study Area of FLN NDA covers a short section of Sheung Yue River on the west where it drains water from Ho Sheung Heung and other areas in Kwu Tung. It joins Shek Sheung River before flowing into Ng Tung River. Its banks are fortified with a rigid lining of stone masonry among which grasses grow sparsely between the stone blocks. At ground level, planted trees are found along both sides of the river. Most of the dominant trees are exotic, including species such as <i>Acacia auriculiformis</i> , <i>Acacia confusa</i> , <i>Eucalyptus</i> spp. and <i>Leucaena leucocephala</i> . Other trees include the native species <i>Cinnamomum camphora</i> , <i>Ficus microcarpa</i> , <i>Ficus virens</i> and <i>Macaranga tanarius</i> .					
This river is reasonably capable of accommodating change and its sensitivity is considered to be medium .					
FLR-1.4	Ma Wat River	Medium	Medium	Medium	Medium
Ma Wat River runs across the southeast part of the FLN NDA Study Area, passing through industrial, rural and agricultural areas. It joins Ng Tung River near Kan Lung Tsuen. Water in the channel decreases significantly during the dry season when its concrete bottom is often partly exposed and dry. There is grasscrete along both its banks, where <i>Imperata koenigii</i> is one of the dominant grasses. Tree planting consisting of large and mature trees is found in the immediate vicinity of this river. Dominant tree species are <i>Acacia confusa</i> , <i>Ficus microcarpa</i> , <i>Melia azedarach</i> and <i>Leucaena leucocephala</i> . Trees with lower abundance include native (<i>Bauhinia blakeana</i> , <i>Celtis sinensis</i> , <i>Macaranga tanarius</i> and <i>Sapium sebiferum</i>) and exotic (<i>Casuarina equisetifolia</i> and <i>Pterocarpus indicus</i>) species.					
Overall this river is relatively tolerant to change and its sensitivity is considered to be medium .					
FLR-1.5	Water Course through Ma Shi Po Agricultural Land	Low	Low	High	Low
This LR describes a channelized concrete watercourse flowing through agricultural land from the Ma Shi Po area towards Ng Tung River where it connects through a concrete channelized link. It is likely to have been used for irrigation purposes, but there is limited water flow and the watercourse is polluted by domestic waste. Vegetation associated with this LR includes the herb species <i>Bidens alba</i> , <i>Eleusine indica</i> and <i>Mikania micrantha</i> .					
This LR is reasonably tolerant to change and its sensitivity is considered to be low .					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR 2 – Water Course					
Refers to natural or semi-natural water courses, including short sections with concreted banks. This LR also includes vegetation associated with the water course, both within the streams and along the banks as well as in the immediate vicinity. The vegetation mainly consists of grasses and shrubs, but also includes some trees in certain areas such as the upland streams, as detailed further in the individual LR descriptions. The vegetation often provides a subtle transition between this LR and its surrounding LR(s).					
Within the Study Area of FLN NDA, this LR includes watercourses running down from different hills into lowland areas.					
FLR-2.1	Natural Stream in Tin Ping Shan Agricultural Land	Medium	Medium	Medium	Medium
Refers to a natural stream passing through Tin Ping Shan (Sacred Hill) agricultural land and finally flowing into the channelized Shek Sheung River. This is a narrow stream with grasses and climbers overgrowing its banks. The grasses mainly include <i>Bidens alba</i> , <i>Polygonum chinense</i> and <i>Oxalis corymbosa</i> . Although parts of this stream are more natural, much of it passes through development areas and is adjacent to open storage areas. It is degraded by pollution while some sections of the stream are fortified by concrete banks.					
This LR has medium tolerance to change and its sensitivity is considered to be medium .					
FLR-2.2	Natural Stream at Cham Shan	Medium	Medium	Low	Medium
This natural stream comes from Cham Shan and flows down to the lowland rural area in the northwest of the FLN NDA Study Area. It is not perennial and water flow may cease during the dry season. The banks of this stream is overgrown with common grasses such as <i>Alocasia odora</i> , <i>Bidens alba</i> and <i>Panicum maximum</i> , particularly in the upstream sections where it flows through extensive grasslands. Within the downstream sections in lowland rural areas, its banks are partially paved in places and the water quality is low as rubbish is commonly found near and in the stream.					
This LR is not of high quality but it is relatively intolerant to change. The sensitivity is considered to be medium .					
FLR-2.3	Natural Streams at Lung Shan	Medium	Medium	Low	High
This LR refers to natural streams located at the foothill of Lung Shan and running through all heavily vegetated areas. The streams are intermittent and cease flowing during the dry season. Grasses and climbers grow along their banks. These include <i>Alocasia odora</i> and <i>Cuscuta chinensis</i> as well as some invasive species such as <i>Mikania micrantha</i> .					
This LR is relatively intolerant to change and its sensitivity is considered to be high .					
FLR-2.4	Natural Streams at Siu Hang San Tsuen	Medium	Medium	Low	High
This LR describes streams at around Siu Hang San Tsuen. Stream banks are colonized by common species such as <i>Commelina diffusa</i> , <i>Polygonum lapathifolium</i> , <i>Alocasia odora</i> and <i>Macaranga tanarius</i> . Part of one stream at Siu Hang San Tsuen is regarded as ecologically important due to its naturalness and moderately diverse aquatic community.					
This LR is relatively intolerant to change and its sensitivity is considered to be high .					
FLR 3 – Water Pond					
Refers to freshwater ponds. The ponds are often associated with agricultural land and used for irrigation, and punctuate the traditional field pattern. Some ponds are also found near residential or developed areas, and have aesthetic landscape value and some are fish ponds. This LR also includes vegetation associated with the ponds, both within and around the banks as well as in the immediate vicinity. The vegetation mainly consists of grasses and shrubs, with scarce trees.					
These water ponds are mainly in Fu Tei Au and Wai Loi Tsuen in FLN NDA, but also in the area overlapping with KTN, including Ho Sheung Heung and Long Valley.					
FLR-3.1	Ho Sheung Heung and Long Valley Water Ponds	Medium	Medium	Low	High
This LR refers to part of the area of ponds in Ho Sheung Heung and Long Valley that are covered by the Study Area of FLN NDA. Ponds in Ho Sheung Heung retain water most of the time including during both the dry and wet seasons, while those in Long Valley are periodically emptied by local farmers during the dry season for management purposes and irrigation. The bunds of these ponds are vegetated by grasses and low shrubs, as well as some fruit trees such as <i>Musa x paradisiaca</i> , <i>Litchi chinensis</i> , <i>Mangifera indica</i> , <i>Dimocarpus longan</i> and <i>Citrus maxima</i> .					
The ponds within this LR are of medium quality with common fruit trees present and are relatively intolerant to change. The sensitivity of this LR is considered to be high .					
FLR-3.2	Water Ponds within the Closed Area	Medium	Medium	Low	High
Part of the north FLN NDA study area lies within the Closed Area and the water ponds of this LR are mainly located north of Sheung Shui Water Treatment Works and beside the Sha Ling Livestock Waste Control Centre but also at the northern base of Cheung Po Tau. In the west, they are generally large ponds covering a reasonably large area while those in the east are large but more isolated. Some of them are active fish ponds, some inactive fish ponds and some connect with wet agricultural land in their vicinity.					
This LR is relatively intolerant to change and its sensitivity is considered to be high .					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR-3.3	Fu Tei Au Water Ponds	Low	Medium	Low	Medium
<p>This is a group of water ponds located between Fu Tei Au Road and Ng Tung River. The ponds were most likely used for commercial fish farming and for irrigation purposes in the past and have now mainly been abandoned. Common grasses (e.g. <i>Bidens alba</i> and <i>Pennisetum</i> spp.) and small trees (e.g. <i>Bombax ceiba</i> and <i>Leucaena leucocephala</i>) grow densely along the banks. Trees are planted or naturally have established themselves on the pond bunds; these include <i>Macaranga tanarius</i>, <i>Litchi chinensis</i>, <i>Dimocarpus longan</i> and <i>Ficus hispida</i>.</p> <p>The quality and significance of this LR is relatively low, but it is intolerant to change. Its sensitivity is therefore considered as medium.</p>					
FLR-3.4	Water Ponds in Eastern Rural Area	Low	Medium	Low	Medium
<p>There are two isolated ponds located in Lung Yeuk Tau in the east FLN NDA Study Area, one in San Uk Tsuen and the other one in Ma Wat Tsuen. Both are no longer used and not actively managed. Grasses and climbers grow along their banks and are also present in their immediate vicinity. The water surface of these ponds is largely colonized by plants.</p> <p>This LR has low landscape quality and is small in area but it is relatively intolerant to change. Its sensitivity is medium.</p>					
FLR-3.5	Wai Loi Tsuen Water Pond	Low	Medium	Medium	Medium
<p>This LR is on the periphery of Wai Loi Tsuen serving as the moat of this traditional village. It has concrete banks and is connected with the Shek Sheung River to its west.</p> <p>Since this is a LR having significant artificial characteristics, it is relatively tolerant to change, however the moat has cultural landscape significance and therefore its sensitivity is considered to be medium.</p>					
<p align="center">FLR 4 – Marsh/ Wetland</p> <p>Refers to freshwater marsh/ wetland landscape resources. Some of them are found at old river meanders which have been truncated during river channelization and retraining, overgrown with herbaceous vegetation and often with some areas of seasonal or permanent open water.</p> <p>Within the Study Area of FLN NDA, this LR is found along certain sections of Ng Tung River and Sheung Yue River as well as in Long Valley agricultural land.</p>					
FLR-4.1	Marshes in Long Valley and near Tsung Yeun	Medium	High	Low	High
<p>This LR refers to part of the Long Valley marshes and marshes near Tsung Yeun that are covered by the Study Area of FLN NDA to its west. They are located within Long Valley agricultural land and in the agricultural land near Tsung Yeun and include both permanent wet marshes and well vegetated marshes. For the permanent wet marshes, they used to be fish ponds or used for irrigation purpose and have now been abandoned and are not actively managed. These marshes contain water all year round; dense emergent vegetation is present in the marshes and shows relatively high diversity including <i>Phragmites karka</i>, sedges <i>Cyperus iria</i> and <i>Kyllinga aromatica</i>, and herbs and climbers <i>Ipomoea aquatica</i>, <i>Polygonum barbatum</i> and <i>Polygonum lapathifolium</i>. For the well vegetated marshes, a large portion of the wetland area is covered with rich and moist topsoil, colonised by common and widespread species such as <i>Brachiaria mutica</i>, <i>Panicum maximum</i>, <i>Bidens alba</i>, <i>Ludwigia perennis</i> and the common wetland fern <i>Cyclosorus interruptus</i>.</p> <p>This LR is fairly rare and is relatively intolerant to change and its sensitivity is considered to be high.</p>					
FLR-4.2	Mitigation Wetland	Medium	High	Low	High
<p>Several plots of marsh are located along Ng Tung River and Sheung Yue River. They were formerly meanders of the river and were isolated during the river channelization. To mitigate the ecological impact resulting from channelization, these areas are now managed by a government department to provide marsh habitat, mainly for wetland dependent wildlife and are hence a wetland landscape resource. Wetland plants and riparian vegetation have been planted and include <i>Commelina diffusa</i>, <i>Hedychium coronarium</i>, <i>Ludwigia perennis</i> and <i>Nelumbo nucifera</i>. Bamboos and trees are also planted along the bunds, e.g. <i>Acacia auriculiformis</i>, <i>Cinnamomum camphora</i>, <i>Hibiscus tiliaceus</i> and <i>Ilex rotunda</i>.</p> <p>This LR had medium quality and maturity and in general marsh habitats are reasonably rare in Hong Kong. Additionally this LR is relatively intolerant to change so its sensitivity is considered to be high.</p>					
<p align="center">FLR 5 – Plantation</p> <p>Refers to medium sized and larger clusters of trees that have been planted and are distinct from natural woodland in terms of species composition since they have been planted by man. Common tree species in this LR include <i>Ficus virens</i>, <i>Ficus microcarpa</i>, <i>Acacia confusa</i>, <i>Bombax ceiba</i>, <i>Macaranga tanarius</i> and <i>Melaleuca quinquenervia</i>. Further details are given in the individual LR descriptions.</p> <p>Within the Study Area of FLN NDA this LR is found in the vicinity of Wai Loi Tsuen, Ha Pak Tsuen, On Kwok Villa and Noble Hill.</p>					
FLR-5.1	Plantation in the Vicinity of Wai Loi Tsuen	Medium	Medium	High	Medium
<p>A mixture of native and exotic trees is planted around the moat of Wai Loi Tsuen and its vicinity, serving as a good screen for the road and industrial area to the west of the village. Compared to those trees planted immediately along the Shek Sheung River in its vicinity, trees in this plantation have a relatively higher diversity, including native species (<i>Bauhinia blakeana</i>, <i>Celtis sinensis</i> and <i>Ficus microcarpa</i>) and exotic species (<i>Acacia confusa</i>, <i>Aleurites moluccana</i>, <i>Bombax ceiba</i>, <i>Cassia siamea</i>, <i>Casuarina equisetifolia</i>, <i>Eucalyptus citriodora</i>, <i>Grevillea robusta</i>, <i>Lagerstroemia speciosa</i> and <i>Melaleuca quinquenervia</i>).</p> <p>This LR has medium amenity value and relatively high capacity to accommodate change and its sensitivity is considered to be medium.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR-5.2	Ha Pak Tsuen Plantation	High	Medium	Low	High
<p>A patch of plantation is located to the east of Ha Pak Tsuen and a number of large mature trees within the village park area near Mun Hau Tsuen. Trees are densely planted within the village as well as along the nearby roads leading to the village to enhance the landscape value of this area. Among these planted trees, Chinese Banyan <i>Ficus microcarpa</i> is one of the most prominent trees as most of them are mature and large. Other tree species include native (<i>Macaranga tanarius</i>) and exotic (<i>Acacia confusa</i> and <i>Bombax ceiba</i>) species.</p> <p>Although this resource was originally man made, it now has many large, mature trees in a traditional village setting and this is harder to recreate, so it has a relatively low capacity to accommodate change. Its sensitivity is considered to be high.</p>					
FLR-5.3	Plantation in the Vicinity of On Kwok Villa and Noble Hill	Medium	Medium	Medium	Medium
<p>There is significant plantation on the periphery of On Kwok Villa and Noble Hill mainly along Tin Ping Road, Lung Sum Road, Ma Sik Road and a branch of Ng Tung River. Trees planted in this area are reasonably mature and dense. They include native (<i>Ficus virens</i>, <i>Ficus microcarpa</i>, <i>Bauhinia blakeana</i> and <i>Macaranga tanarius</i>) and exotic (<i>Bombax ceiba</i>, <i>Cassia siamea</i>, <i>Delonix regia</i>, <i>Eucalyptus</i> spp., <i>Ficus religiosa</i> and <i>Melaleuca quinquenervia</i>) species.</p> <p>Although trees in this LR provide a certain high landscape value, the trees are set amongst modern residential areas. The LR was originally a man-made resource and is able to be recreated fairly easily meaning it has a reasonable capacity to accommodate change. Its sensitivity is therefore considered to be medium.</p>					
<p style="text-align: center;">FLR 6 - Hillside Woodland</p> <p>Refers to woodland areas largely scattered over hillsides, including at the base of hills and associated patches of woodland. This LR is predominantly composed of native tree species and is <i>generally</i> located some distance from intense human activities (except at the base of hills where it often borders rural development areas), growing naturally with some understory vegetation. Common tree species in this LR include <i>Acacia confusa</i>, <i>Macaranga tanarius</i>, <i>Ficus microcarpa</i>, <i>Dimocarpus longan</i>, <i>Celtis sinensis</i>, <i>Cinnamomum camphora</i> and <i>Ficus hispida</i>. Further details are given in the individual LR descriptions.</p> <p>Within the Study Area of the FLN NDA, this LR is largely scattered at the foothill of Cham Shan, Wa Shan and Lung Shan.</p>					
FLR-6.1	Sheung Shui Water Treatment Works Hillside Woodland	High	Medium	Low	High
<p>Several small patches of woodland lie at the eastern base of the hillside surrounding Sheung Shui Water Treatment Works. Trees grow naturally and densely in this area and dominant species include <i>Macaranga tanarius</i>, <i>Celtis sinensis</i>, <i>Cinnamomum camphora</i>, <i>Melia azedarach</i> and <i>Leucaena leucocephala</i>.</p> <p>This LR is relatively mature and intolerant to change. The sensitivity of this LR is considered to be high.</p>					
FLR- 6.2	Cham Shan and Wa Shan Hillside Woodland	High	Medium	Low	High
<p>This LR refers to the relatively large and continuous woodlands along the foothills of Cham Shan and Wa Shan to their northern, western and southern sides, bordering shrubland/grassland on the higher ground above and rural villages and agricultural lands in the lowland area below. Due to limited human disturbance, these trees are mature in medium to large sizes. Dominant tree species include both native and exotic ones. Dominant native trees are <i>Celtis sinensis</i>, <i>Cinnamomum camphora</i>, <i>Ficus hispida</i>, <i>Ficus variegata</i> var. <i>chlorocarpa</i>, <i>Rhus succedanea</i>, <i>Sapium discolor</i>, <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i>. Dominant exotic species include <i>Melia azedarach</i>, <i>Dimocarpus longan</i>, <i>Syzygium jambos</i>, <i>Leucaena leucocephala</i>, <i>Acacia confusa</i> and <i>Casuarina equisetifolia</i>.</p> <p>This LR is considered to be relatively mature and of high quality and it has little capacity to tolerate change. The sensitivity of this LR is considered to be high.</p>					
FLR- 6.3	Ma Wat Wai Hillside Woodland	High	Medium	Low	High
<p>This LR refers to a small and isolated woodland patch embracing Ma Wat Wai on all sides except the northeast. A mixture of exotic and native trees as well as many bamboos is present in this area. Dominant trees include native species (<i>Celtis sinensis</i>, <i>Ficus microcarpa</i>, <i>Ficus hispida</i>, <i>Sterculia lanceolata</i>, <i>Rhus succedanea</i> and <i>Sapium discolor</i>) and exotic species (<i>Dimocarpus longan</i> and <i>Melia azedarach</i>).</p> <p>This is a mature resource and of relatively high quality. It has little capacity to tolerate change. Its sensitivity is considered to be high.</p>					
FLR- 6.4	Hillside Woodland at Lung Shan and Wa Mei Shan	High	Medium	Low	High
<p>This LR covers part of the woodlands on the foothill of Lung Shan to the northeast of Fanling Highway and the foothill of Wa Mei Shan to the southwest in the vicinity of Wo Hop Shek. This resource includes mature woodland trees growing on hillside slopes, including native species (<i>Celtis sinensis</i>, <i>Macaranga tanarius</i>, <i>Ficus hispida</i>, <i>Ficus microcarpa</i> and <i>Litsea glutinosa</i>) and exotic species (<i>Acacia confusa</i>, <i>Eucalyptus</i> spp., <i>Dimocarpus longan</i>, <i>Melia azedarach</i> and <i>Syzygium jambos</i>).</p> <p>The quality and landscape value of this LR is relatively high, with little tolerance to change and its sensitivity is considered to be high.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR 7 – Lowland Woodland Refers to woodland growing on low ground (generally <40 mPD), often found near rural village areas of human activities in small, fragmented patches, with differing tree species according to location. Common tree species found in this LR include <i>Dimocarpus longan</i> , <i>Cinnamomum camphora</i> , <i>Macaranga tanarius</i> , and <i>Leucaena leucocephala</i> . Further details are given in the individual LR descriptions. Within the Study Area of FLN NDA, this LR is found in Vernon Pass, Fu Tei Au, Hung Kiu San Tsuen, Sacred Hill, Ling Hill and Ling Shan Tsuen.					
FLR-7.1	Vernon Pass Woodland	Low	Medium	Medium	Medium
This LR refers to a small patch of woodland at Vernon Pass in the northwest of the Study Area. It contains some built structures and is generally frequently disturbed by human interaction leading to the vegetation within the LR being of lower quality. The dominant species in this LR are native species (<i>Ficus variegata</i> var. <i>chlorocarpa</i> , <i>Ficus hispida</i> and <i>Macaranga tanarius</i>) and exotic species (<i>Dimocarpus longan</i>). Due to its association with built structures and therefore not being in a totally natural state, the quality of this LR is low. It has a medium capacity to tolerate change and its sensitivity is considered to be medium .					
FLR- 7.2	Lowland Woodland at Fu Tei Au and Sheung Shui Water Treatment Works	Medium	Medium	Medium	Medium
This LR refers to several patches of woodland in Fu Tei Au area and in the close vicinity of Sheung Shui Water Treatment Works. They are generally surrounded by, or bordering, rural areas and abandoned agricultural lands and so receive moderate human disturbance leading to the vegetation within the LR being of lower quality. Trees in this resource are not diverse and dominated by <i>Dimocarpus longan</i> , <i>Hibiscus tiliaceus</i> , <i>Celtis sinensis</i> , <i>Macaranga tanarius</i> and <i>Cinnamomum camphora</i> . This is a landscape resource of medium quality and has a medium tolerance to change, making its sensitivity medium .					
FLR- 7.3	Hung Kiu San Tsuen Lowland Woodland	Medium	Medium	Medium	Medium
This LR refers to the lowland woodlands in the vicinity of Hung Kiu San Tsuen, east of Man Kam To Road. These woodlands are largely surrounded by adjacent industrial/open storage areas and therefore potentially suffer from disturbance by human activities making this resource of lower quality than it would otherwise be. These trees are of medium to large sizes, and are dominated by both native and exotic species. The most abundant native species include <i>Celtis sinensis</i> , <i>Ficus microcarpa</i> , <i>Ficus hispida</i> , <i>Bischofia javanica</i> , <i>Cinnamomum camphora</i> , and <i>Macaranga tanarius</i> , while exotic species include <i>Averrhoa carambola</i> , <i>Casuarina equisetifolia</i> , <i>Leucaena leucocephala</i> , <i>Dimocarpus longan</i> and <i>Melia azedarach</i> . This LR has a medium amenity value, relatively low quality, a medium tolerance to change and its sensitivity is considered to be medium .					
FLR- 7.4	Sacred Hill Lowland Woodland	Medium	Medium	Low	High
This LR is located to the east of Tin Ping Shan Tsuen, adjacent to the large Tin Ping Shan Tsuen agricultural lands. Common tree species include <i>Celtis sinensis</i> , <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i> . This LR is relatively intolerant to change and its sensitivity is considered to be high .					
FLR-7.5	Ling Hill and Ling Shan Tsuen Lowland Woodland	High	Medium	Low	High
This LR refers to the woody areas near the intersection of Ma Sik Road and Jockey Club Road. These woodland patches are on the periphery of and associated with Ling Shan Tsuen. There is an old temple (Sam Sheung Temple) located in this village and it is also surrounded by this woodland. Trees in this resource are fairly large and mature including both native and exotic species. Native species include <i>Celtis sinensis</i> , <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i> and exotic species include <i>Acacia confusa</i> , <i>Delonix regia</i> and <i>Dimocarpus longan</i> . This is a natural resource of high quality and is not able to accommodate change. Its sensitivity is considered to be high .					
FLR 8 - Shrubland / Grassland Mosaic Refers to a mosaic of shrubland and grassland which is usually large in size and uniform in appearance. This LR is typical of the fire-maintained hill-slopes in Hong Kong and common grass species include <i>Miscanthus sinensis</i> , <i>Neyraudia</i> spp. and <i>Panicum</i> spp. Further details are given in the individual LR descriptions. Within the Study Area of FLN NDA, this LR is found largely on hillsides, particularly on Wa Shan, Cham Shan and Lung Shan, as well as some relatively lowland areas to the west of the Study Area.					
FLR - 8.1	Shrubland/Grassland Mosaic West of and along Sheung Yue River and Ng Tung River	Low	Low	High	Low
These shrublands /grasslands are all located in lowland areas and in the vicinity of man-made resources such as channelized watercourses, rural and urban development areas. They are waste grounds through lack of maintenance and have been gradually colonized by weeds and climbers. This LR is of low landscape value and amenity and is relatively tolerant to change. Its sensitivity is low .					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR-8.2	Fu Tei Au Shrubland/Grassland Mosaic	Low	Low	High	Low
<p>This resource is located north of Fu Tei Au Road surrounding the Sheung Shui Water Treatment Works. It is dominated by grasses such as <i>Miscanthus sinensis</i> and <i>Miscanthus floridulus</i> and some small trees including <i>Rhus succedanea</i> and <i>Macaranga tanarius</i> are also present in this area.</p> <p>This LR is of low landscape value and amenity and is relatively tolerant to change. Its sensitivity is low.</p>					
FLR- 8.3	Shrubland/Grassland Mosaic at Cham Shan and Wa Shan	Medium	Low	Medium	Medium
<p>This is an extensive and continuous resource in the northeast of the Study Area of FLN NDA, i.e. the hillsides of Cham Shan and Wa Shan. Similar to most of the other hillsides in Hong Kong, this large area of grassland is also maintained by hill fires and mainly colonized by grasses. Grass and herb species such as <i>Miscanthus sinensis</i>, <i>Neyraudia reynaudiana</i> and <i>Panicum</i> spp. are widespread within the resource. Nevertheless, some patches close to Cheung Po Tau, which are undergoing vegetation succession towards shrubland, support higher plant diversity and show more complex floristic structure. Shrubs commonly found in these areas include <i>Melastoma candidum</i>, <i>Rhus succedanea</i>, <i>Rhodomyrtus tomentosa</i> and <i>Sapium discolor</i>.</p> <p>This LR can re-establish itself fairly easily and is therefore considered to be relatively tolerant to change but is of medium quality and maturity. Its sensitivity is considered to be medium.</p>					
FLR - 8.4	Shrubland/Grassland Mosaic at Lung Shan	Medium	Low	Medium	Medium
<p>This LR is part of the extensive shrubby grassland on the uplands of Lung Shan. It merges into hillside woodland at the foothills and is sometimes adjacent to the urban development area. Similar to the other hilly shrubland/grassland in Hong Kong, this LR is maintained by periodical hill fires.</p> <p>This LR can re-establish itself fairly easily and is therefore considered to be relatively tolerant to change. It is of medium quality and maturity and its sensitivity is considered to be medium.</p>					
<p style="text-align: center;">FLR 9 - Agricultural Land</p> <p>Refers to land used for agriculture including crops and orchards as well as ornamental plant nurseries. This LR contains a small number of structures such as small irrigation ponds, green houses, equipment sheds and small/ narrow hard paved areas. It not only contains agricultural vegetation but also some scattered non-agricultural vegetation including some shrubs and trees. It is often an intermediary between areas of development and natural areas.</p> <p>Within the Study Area of the FLN NDA, this LR is mainly found in Tin Ping Shan, Ma Shi Po and Sheung Shui Wa Shan.</p>					
FLR- 9.1	Agricultural Lands in Ho Sheung Heung and Long Valley	High	High	Low	High
<p>The Study Area of FLN NDA covers small parts of the agricultural lands in Ho Sheung Heung and Long Valley in the west. They are mainly wet agricultural lands, including both active and inactive fields. Common wetland crops in Long Valley and Ho Sheung Heung share a high similarity in their species composition, including <i>Ipomoea aquatic</i>, <i>Nasturtium officinale</i>, <i>Eleocharis dulcis</i>, <i>Oryza sativa</i> and <i>Trapa bispinosa</i>. Fruit trees are present along field bunds including <i>Dimocarpus longan</i>, <i>Litchi chinensis</i> and <i>Magnifera indica</i>.</p> <p>This LR is of good quality and a significant local resource due to its large size, long history and crop production. Although agricultural land is normally relatively easy to re-establish in the right environment, this particular LR would be relatively hard to recreate in Hong Kong given its size and it being largely not fragmented. Its sensitivity is high.</p>					
FLR-9.2	Fu Tei Au Agricultural Land	Medium	Medium	Medium	Medium
<p>Agricultural land in Fu Tei Au area is partially abandoned. Common vegetables such as <i>Brassica parachinensis</i> and <i>Lactuca sativa</i> are grown in the active fields. In those inactive fields, grasses dominated by <i>Miscanthus</i> spp. have colonized the land, with some isolated shrubs and trees growing along the previous field bunds without management. Those trees include <i>Dimocarpus longan</i>, <i>Litchi chinensis</i> and <i>Magnifera indica</i>.</p> <p>This LR provides some green space between the hard surfaces of industrial/open storage areas or rural development areas making it locally reasonably important. Agricultural land is fairly easy to re-establish in the right environment and especially given some of this land is abandoned, it has medium tolerance to change. The LR is considered to have medium sensitivity.</p>					
FLR - 9.3	Agricultural Land between Ng Tung River and Shek Sheung River	Medium	Medium	Medium	Medium
<p>A patch of active agricultural land is located in the flood area between Ng Tung River and Shek Sheung River, north of Po Wan Road. This agricultural land probably connected with the agricultural land in Tin Ping Shan Tsuen (FLR-9.4) in the past but has now been separated by an open storage area between them (FLR-13.1). The area of this LR is relatively small, but of reasonable quality.</p> <p>This LR has medium value and being agricultural land has medium ability to tolerate change in the right environment. It is considered to have medium sensitivity.</p>					
FLR - 9.4	Tin Ping Shan Tsuen Agricultural Land	Medium	Medium	Medium	Medium
<p>Tin Ping Shan Tsuen agricultural land is located on the north of Tin Ping Shan Tsuen. This is a reasonably sized,unfragmented area of agricultural land and more than half the fields remain active. In addition to open farmlands, there are also some orchards in which small fruit trees including <i>Musa x paradisiaca</i>, <i>Litchi chinensis</i> and <i>Dimocarpus longan</i> are cultivated.</p> <p>The LR is mature and established and of medium quality, yet since it is agricultural land, in the right environment it could be recreated, meaning it has reasonable capacity to accommodate change. It is considered to have medium sensitivity.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR - 9.5	Agricultural Land at Sheung Shui Wa Shan	Medium	Medium	Medium	Medium
<p>This LR is located in the lowland area at the foot of Wa Shan, along the eastern bank of Ng Tung River. Much of the agricultural land within this area is abandoned with weeds, climbers, isolated shrubs and banana trees and some other invasive trees (e.g. <i>Leucaena leucocephala</i>) colonizing the land. However some areas are still active and this land is a green resource neighbouring village developments.</p> <p>This LR has medium landscape quality and maturity. Being agricultural land it is relatively tolerant to change in the right environment. It is considered to have medium sensitivity.</p>					
FLR - 9.6	Agricultural Land in Wu Nga Lok Yueng, Siu Hang San Tsuen, Siu Hang Tsuen and Shek Wu San Tsuen	Medium	Medium	Medium	Medium
<p>This resource is mainly situated in the east of the Study Area of FLN NDA and includes both active and inactive agricultural lands. A variety of crops are grown in the active fields, including <i>Benincasa hispida</i>, <i>Pisum sativum</i>, <i>Solanum melongena</i> and <i>Lactuca sativa</i>. As a result of human activity of cultivation, vegetation on the bunds of these fields is poorly developed and is dominated by common herbs such as <i>Ageratum conyzoides</i>, <i>Hedyotis diffusa</i> and <i>Kyllinga brevifolia</i> and <i>Lobelia chinensis</i> and few shrubs and trees are present. Some of the inactive fields, due to the lack of management and disturbance for a long time, are beginning to develop naturally into grassland or shrubby grassland with colonisation by herbs, isolated shrubs and small trees.</p> <p>This LR is mature and established yet the land is highly fragmented and overall the LR is not of high quality. Since it is agricultural land, in the right environment it could be re-established, meaning it has reasonable capacity to accommodate change. It is considered to have medium sensitivity.</p>					
FLR - 9.7	Agricultural Land South of Sha Tau Kok Road	Medium	Medium	Medium	Medium
<p>This resource is situated in the south east of the Study Area of FLN NDA, south of Sha Tau Kok road and near the base of Lung Shan. It includes both active and inactive agricultural lands near Lung Yeuk Tau, Mat Wat Wai and east of Wing Ning Wai, Wing Ning Tsuen and Tung Kok Wai. A variety of crops are grown in the active fields, including <i>Benincasa hispida</i>, <i>Brassica chinensis</i> and <i>Lactuca sativa</i>. For those inactive fields, due to the lack of management, they are beginning to develop naturally into grassland or shrubby grassland with colonisation by herbs (e.g. <i>Alocasia odora</i>, <i>Miscanthus sinensis</i>, and <i>Bidens alba</i>) and small trees (e.g. <i>Ficus hispida</i> and <i>Macaranga tanarius</i>).</p> <p>This LR has medium value and, being agricultural land, is reasonably easy to recreate in the right environment, which means it has medium capacity to accommodate change and it is considered to have medium sensitivity.</p>					
<p align="center">FLR 10 - Open Space / Recreation Area</p> <p>Refers to areas that provide recreational use either in the form of playground areas or sports pitches. There is vegetation associated with this LR, as well as landscaped planting.</p> <p>Within the Study Area of the FLN NDA, this LR is found at North District Sports Ground.</p>					
FLR- 10.1	North District Sports Ground	Medium	Medium	High	Low
<p>North District Sports Ground is a multi-purpose sports ground located between Jockey Club Road and Tin Ping Road. Facilities provided in this sports ground include natural grass football field, running track, covered grandstand, public leisure pool, basketball/volleyball courts and outdoor and indoor tennis courts. Dominant amenity trees planted in this LR include <i>Ficus microcarpa</i>, <i>Bauhinia blakeana</i> and <i>Bauhinia variegata</i>.</p> <p>This LR has medium landscape value and due to its man-made nature and high percentage of hard landscape, has a high capacity to accommodate change. Apart from the open grass pitch, it has little planting and therefore soft landscape is relatively low value. Overall its sensitivity is considered to be low.</p>					
<p align="center">FLR 11 – Urban Development Area</p> <p>Refers to urbanized areas which are heavily developed with considerable hard paved surfaces and limited landscaped areas. These LR's consist mainly of large clusters of medium to high density buildings with a high degree of related infrastructure and often with some high rise developments, with some associated facilities such as post office, police station, hospital, restaurants, supermarkets etc. The LR also includes work sites where construction is ongoing, or sites being cleared/ formed prior to development of a structure that would form part of an urban area. Vegetation in this LR is mainly landscape planting with scattered amenity shrubs and trees, some small public green spaces and private gardens.</p> <p>Within the Study Area of the FLN NDA, this LR broadly covers Lo Wu Correctional Institution and the large urban development areas in Sheung Shui and Fanling.</p>					
FLR-11.1	Lo Wu Correctional Institution	Low	Low	High	Low
<p>Lo Wu Correctional Institution is located in between Ho Sheung Heung Road and the foothills of Tai Shek Mo. Buildings in this LR are medium-rise and roads are all hard-paved. Tree planting is limited within the institution although it does have some green roofs.</p> <p>This LR has a high ability to accommodate change due to its man-made nature and is considered to have low sensitivity.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR- 11.2	Sheung Shui Urban Development Area	Low	Low	High	Low
<p>This LR refers to the northeastern part of the Sheung Shui town centre. There are high-rise public (e.g. Tin Ping Estate) and private (e.g. Tsui Lai Garden, On Kwok Villa and Noble Hill) estates, training centres, multi-storey car park and home for the aged located in this area. Gardens and small scale playgrounds can also be found associated with those residential blocks. Amenity trees and shrubs are planted and well maintained to enhance the environment, and the dominant tree species are <i>Melaleuca quinquenervia</i>, <i>Acacia confusa</i>, <i>Bauhinia blakeana</i>, <i>Ficus microcarpa</i>, <i>Bombax ceiba</i>, <i>Cassia siamea</i>, <i>Eucalyptus citriodora</i> and <i>Phoenix roebelenii</i>.</p> <p>This LR has low landscape value and due to its man-made nature, has a high capacity to accommodate change. Its sensitivity is considered to be low.</p>					
FLR- 11.3	Fanling Urban Development Area	Low	Low	High	Low
<p>This LR mainly covers Luen Wo Hui urban development area in Fanling. Medium and high rise residential buildings (e.g. Fanling Garden, Wing Fok Centre, Wing Fai Centre, Union Plaza, Belair Monte, Grand Regentville), schools (e.g. Fanling Public School, Buddhist Ma Kam Chan Memorial English Secondary School and Fanling Rhenish Church Secondary School), a church (St. Joseph's Church), cinema, commercial complexes and street markets can be found in this area. Gardens and playgrounds of small scale can also be found associated with the residential blocks. Amenity trees and shrubs are planted along roads but are relatively limited. The dominant tree species are <i>Melaleuca quinquenervia</i>, <i>Acacia confusa</i>, <i>Ficus microcarpa</i>, <i>Cassia siamea</i> and <i>Bauhinia variegata</i>.</p> <p>This LR has low landscape value and due to its man-made nature, has a high capacity to accommodate change. Its sensitivity is considered to be low.</p>					
FLR 12 - Rural Development Area					
<p>Refers to traditional villages, modern villages and small scale residential areas dominated by domestic structures (mainly of 2-3 stories) interwoven with roads and paths, There are some Ancestral Halls, shrines and temples, and this LR may also contain some facilities such as small police stations, post offices, and covered water reservoirs and pumping stations and some small, managed, recreational areas (such as football and basket ball pitches) and small wasteland areas either wholly or partly covered by weedy or sparse vegetation. This LR has a few small orchard areas associated with it and private gardens, as well as amenity planting among the built structures. This LR usually occurs in fragmented patches with agricultural or natural landscape resources adjacent to it.</p> <p>Within the Study Area of the FLN NDA this LR includes Ngam Pin, Fu Tei Au, Sheung Shui lowland area, Lung Yeuk Tau, Wo Hap Shek, as well as some areas at the base of Wa Shan and Lung Shan.</p>					
FLR-12.1	Rural Development Area in Ngam Pin	Low	Medium	Medium	Low
<p>This LR is just located within the Closed Area. Structures in the village are old and simple with most of the residential buildings consisting of iron structures. Tall grasses grow along the roads winding between houses without management and much of the area is abandoned.</p> <p>This LR is considered to have low sensitivity.</p>					
FLR- 12.2	Rural Development Area in the Vicinity of Fu Tei Au	Low	Medium	Medium	Medium
<p>This LR mainly covers the rural area between Fu Tei Au Road and Ng Tung River. Settlements in this area consist predominantly of simple and traditional houses of a single storey, some of which are fenced off. Trees are present both along the roads winding between houses and in private gardens, including <i>Dimocarpus longan</i>, <i>Macaranga tanarius</i> and <i>Aleurites moluccana</i>.</p> <p>Man Ming Temple, constructed before 1924, is located within to the south of this LR. It is a Grade 3 Historic Building which is a three-hall building, with two open corridors on the two sides of the central hall, used to access the end hall.</p> <p>This resource has limited landscape value, but some of its structures have heritage significance and therefore have little ability to accommodate change. Its sensitivity is overall considered to be medium.</p>					
FLR- 12.3	Rural Development Area in the North of FLN NDA	Low	Low	High	Low
<p>This LR covers the rural development areas in the north of the Study Area and it is partially located within the Closed Area. Main structures included in this LR are the Border District Police Headquarters, Sha Ling Livestock Waste Control Centre, a firing range at the uphill of Cheung Po Tau, as well as some scattered village settlements in Sha Ling. A number of individual Chinese Banyan (<i>Ficus microcarpa</i>) are well maintained along the boundary fence of Border District Police Headquarters, while in other areas there are patches of trees along the roads, most of them without management. These trees mainly include <i>Macaranga tanarius</i>, <i>Acacia confusa</i>, <i>Bombax ceiba</i> and <i>Casuarina equisetifolia</i>.</p> <p>Overall this LR has limited landscape value and high ability to accommodate change. It is considered to have low sensitivity.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR- 12.4	Rural Development Area in Sheung Shui Lowland Area	Medium	Medium	Medium	Medium
<p>This is a lowland resource where a number of villages are concentrated, particularly in the western part which encompasses Wai Loi Tsuen, Man Kok Village, Mun Hau Tsuen, Po Sheung Tsuen, Ha Pak Tsuen, Chung Sum Tsuen, Sheung Pak Tsuen, Tai Yuen Tsuen and Hing Yan Tsuen (collective named as Sheung Shui Heung/Sheung Shui Wai). The eastern part of this LR includes Tin Ping Shan Tsuen. Fung Kai School with its associated football pitch and several basketball pitches and some mature trees are also located at the centre of this LR.</p> <p>Those villages in the west are well established, consisting of some modern housing of 2-3 storeys and some traditional housing and include one declared monument and two graded historic buildings. Liu Man Shek Tong Ancestral Hall, a declared monument, was built by Liu Man Shek Tong in 1751 at Mun Hau Tsuen. This typical three-hall two-courtyard building is decorated by plaster mouldings, wood carvings and murals of auspicious motifs and pictures. One of the graded historic buildings is Liu Ying Lung Study Hall, situated at Po Sheung Tsuen which is a confirmed Grade 1 Historic Building. It was renovated in 1923 and was once the place where Spring Equinox, births and weddings were celebrated. The other is Old Sheung Shui Police Station, which is a confirmed Grade 2 Historic Building. It was one of thirteen police stations built soon after the British took over the New Territories and later became a police reporting centre and then a Junior Police Call (JPC) Club House after the new Sheung Shui Police Station was opened in 1979. Tin Ping Shan Tsuen in the east is relatively small, mainly consisting of more traditional and simple structured houses of a single storey. Most areas are hard-surfaced and have limited vegetation except those private amenity plantings.</p> <p>Given the traditional nature of much of this LR and its historical buildings, this LR is relatively intolerant to change and is considered to have medium sensitivity.</p>					
FLR- 12.5	Wa Shan Rural Development Area	Medium	Medium	Medium	Medium
<p>This LR refers to several rural development areas along the hillsides or at the foothill of Wa Shan. They are largely rural settlements including Sheung Shui Wa Shan village, Siu Hang Tsuen and Siu Hang San Tsuen. Most of these villages are undergoing transformation due to the fact that many houses have been replaced by modern housing blocks of 2-3 stories and some new housing blocks are being constructed. This LR has limited softscape treatment but does include some trees (e.g. <i>Mangifera indica</i>, <i>Dimocarpus longan</i> and <i>Livistona chinensis</i>) and private amenity plantings (e.g. <i>Duranta erecta</i>).</p> <p>One temple is located in Siu Hang Tsuen, (Fuk Tak Temple), established some 100 years ago. The temple is for the worship of the Earth God and other gods/deities that give protection to the villagers and so is locally important. Although the temple is not a graded historic building, it is at one end of the Lung Yeuk Tau Heritage Trail. Part of San Wai/Tai Ling Firing Range is also included in this LR. It is a large piece of grassland for military purpose. Many mature trees grow in the surroundings, including <i>Macaranga tanarius</i>, <i>Celtis sinensis</i>, <i>Leucaena leucocephala</i> and <i>Eucalyptus</i> spp.</p> <p>This LR is largely a man-made area but some of the historical buildings and the vegetation associated with the firing range are relatively intolerant to change. The overall sensitivity of this LR is medium.</p>					
FLR- 12.6	Lung Yeuk Tau Rural Development Area	Medium	Medium	Medium	Medium
<p>A group of villages aggregate in Lung Yeuk Tau, including Kan Lung Tsuen, San Wai, San Uk Tsuen, Wing Ning Wai, Wing Ning Tsuen, Tung Kok Wai, Ma Wat Wai, Ma Wat Tsuen and Lo Wai. These villages are largely divided into two parts (i.e. northern and southern parts) by Sha Tau Kok Road.</p> <p>Houses in Kan Lung Tsuen, San Wai and San Uk Tsuen in the north are relatively traditional and simple. The Sisters of the Precious Blood Children's Village is also located in this area. There are facilities such as a playground and basketball pitch provided in this village.</p> <p>Wing Ning Wai, Wing Ning Tsuen, Tung Kok Wai, Ma Wat Wai, Ma Wat Tsuen and Lo Wai in the southern part of this LR are either modern villages with housing blocks of 2-3 stories or villages undergoing transformation. However, some historical elements remain in these villages. These include the Entrance Gate of Wing Ning Wai and Tsung Kyam Church at Shung Him Tong Tsuen, both of which are classified as Grade 3 Historic Buildings, as well as the Entrance Tower of Ma Wat Wai and Entrance Tower and Enclosing Walls of Lo Wai, which are declared monuments. The whole village area is mostly hard-surfaced and has limited softscape treatment but does include some trees (e.g. <i>Dimocarpus longan</i>, <i>Sterculia lanceolata</i> and <i>Ficus microcarpa</i>) and some bamboos.</p> <p>The Lung Yeuk Tau Heritage Trail passes through this LR taking in the high number of heritage buildings in the LR. Although many village areas in this LR are relatively modern, the historic buildings and declared monument are vulnerable to change since they cannot be easily recreated and overall this LR has medium sensitivity.</p>					
FLR- 12.7	Rural Development Area at Wo Hop Shek and Lung Shan	Low	Low	High	Low
<p>This LR includes Cyber Domaine, Tong Hang and Tong Hang Tung Chuen at the foothill of Lung Shan as well as part of the Wo Hop Shek San Tsuen in Wo Hop Shek. It also includes the Tong Hang Fresh Water Service Reservoir that is located on the hillside of Lung Shan. Trees commonly found in this LR are <i>Melaleuca quinquenervia</i>, <i>Celtis sinensis</i>, <i>Ficus hispida</i>, <i>Leucaena leucocephala</i>, <i>Dimocarpus longan</i>, and <i>Eucalyptus citriodora</i>.</p> <p>This LR is dominated by domestic residencies. Its landscape amenity, significance and quality are moderate and it has a high ability to tolerate change, making its overall sensitivity low.</p>					
FLR- 12.8	Rural Development Area at Ma Shi Po	Medium	Low	Medium	Medium
<p>This LR refers to the rural settlements scattered among the agricultural lands in Ma Shi Po. Most of the settlements are old in style and of small and simple structure. Trees associated with these village houses include <i>Celtis sinensis</i>, <i>Ficus hispida</i>, <i>Leucaena leucocephala</i> and <i>Dimocarpus longan</i> etc.</p> <p>This LR is dominated by domestic residencies. Its landscape amenity, significance and quality are medium and it has medium ability to tolerate change, making its overall sensitivity medium.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR- 12.9	Wu Nga Lok Yeung and Ling Shan Tsuen Rural Development Area	Low	Low	High	Low
<p>This LR mainly refers to two patches of continuous rural development located at Wu Nga Lok Yeung as well as Ling Shan Tsuen and Good View New Village.</p> <p>Some of the construction works at Wu Nga Lok Yeung are suspended, leaving two rows of 3-storey unfinished village houses on exposed ground. Plants are generally absent from this area. The village houses in Ling Shan Tsuen and Good View New Village are relatively concentrated with large trees frequently found along the winding roads and in private gardens. These trees include <i>Celtis sinensis</i>, <i>Dimocarpus longan</i>, <i>Livistona chinensis</i> and <i>Macaranga tanarius</i>, etc.</p> <p>This LR is dominated by domestic residencies. Its landscape amenity, significance and quality are medium and it has high ability to tolerate change, making its overall sensitivity low.</p>					
FLR 13 - Industrial / Open Storage					
<p>Refers to areas which are heavily adapted for human industrial use, such as factory facilities, waste processing plants and other industrial buildings, often with some open areas for storage, parking or other associated activities. These areas have small roads within them and some concrete drainage channels. There is very little existing vegetation within this LR.</p> <p>Within the Study Area of FLN NDA, this LR is geographically divided into Sheung Shui and Fanling industrial/open storage areas and will be further described individually.</p>					
FLR- 13.1	Sheung Shui Industrial/Open Storage Area	Low	Low	High	Low
<p>The western part of this LR contains Sheung Shui Water Treatment Works, Sheung Shui Slaughter House, Shek Wu Hui Sewage Treatment Works as well as several warehouses and industrial buildings. Planted trees are found along the roads and dominant species include <i>Acacia auriculiformis</i>, <i>Acacia confusa</i> and <i>Leucaena leucocephala</i>.</p> <p>The rest of this LR is largely used for open storage and car parks as well as several waste processing plants. There is a Tin Hau Temple (No. 41 Hung Kiu San Tsuen), but it is not a graded historic building. Trees within this area are not actively managed and grasses occupy many places between the car parks. Tree species commonly found include <i>Leucaena leucocephala</i>, <i>Bauhinia blakeana</i>, <i>Bauhinia variegata</i>, <i>Macaranga tanarius</i>, <i>Delonix regia</i>, <i>Cassia siamea</i>, <i>Bombax ceiba</i>, <i>Syzygium jambos</i>, <i>Ficus virens</i>, <i>Mangifera indica</i> and <i>Acacia auriculiformis</i>.</p> <p>This LR has relatively low landscape amenity value and consists mostly of modern man-made structures that can be easily recreated. Its sensitivity is considered to be low.</p>					
FLR- 13.2	Fanling Industrial Area	Low	Low	High	Low
<p>This LR refers to the warehouses and industrial buildings, factories and workshops southwest of Luen Wo Hui in Fanling District. There are individual fenced factories containing some open areas for car parks with small patches of wild grasses or small shrubs growing on exposed ground. Trees grow sparsely along the roads between building blocks and include <i>Celtis sinensis</i>, <i>Hibiscus tiliaceus</i>, <i>Aleurites moluccana</i> and <i>Leucaena leucocephala</i>.</p> <p>This LR has low amenity value and is capable of accommodating change. It is considered to have low sensitivity.</p>					
FLR 14 - Major Transportation Corridor					
<p>Refers to MTRC railway, Fanling Highway, as well as Sha Tau Kok Road (Lung Yeuk Tau) and all the associated intersections. There is tree planting along the sides of the roads consisting of a variety of indigenous and exotic species such <i>Cassia siamea</i> and <i>Acacia confusa</i>. In addition, there is some planting along the central divider (median) in some sections, including of amenity shrubs such as <i>Allamanda schottii</i> and sometimes palm trees <i>Livistona chinensis</i>. Drainage channels associated with the roads/highway are considered part of this LR as they are an integral function of the roadscape.</p>					
FLR- 14.1	MTRC East Rail	Low	Low	High	Low
<p>The LR includes a short section of MTRC East Railway running between Sheung Shui and Lo Wu Stations. No significant planting is found along the railway lines and trees growing randomly in its vicinity are dominated by <i>Leucaena leucocephala</i>.</p> <p>This resource is highly utilized by the general public and well linked but it is man-made with low landscape value and a high ability to accommodate change. Its sensitivity is low.</p>					
FLR- 14.2	Sha Tau Kok Road (Lung Yeuk Tau)	Medium	Low	Medium	Medium
<p>Sha Tau Kok Road (Lung Yeuk Tau) starts from Sheung Shui Police Station and runs northwest through the south of Luen Wo Hui in the FLN NDA Study Area. There is significant roadside planting, with planted trees dominated by <i>Melaleuca quinquenervia</i> found along the road sides and the central divider. In addition to trees, amenity shrubs such as <i>Ixora chinensis</i> and <i>Schefflera arboricola</i> are also planted to enhance to landscape value of this area.</p> <p>Despite this being a man-made resource, the landscape value of this LR is increased by the significant roadside planting with many mature roadside trees and overall its sensitivity is considered to be medium.</p>					
FLR- 14.3	Fanling Highway	Medium	Low	Medium	Medium
<p>This LR is a major transportation corridor connecting Fanling, Sheung Shui, Kwu Tung and other adjacent areas. It includes a short section of Fanling Highway with a reasonable amount of roadside planting with some mature tree. Species include <i>Melaleuca quinquenervia</i>, <i>Bombax ceiba</i>, <i>Ficus microcarpa</i>, <i>Casuarina equisetifolia</i>, <i>Acacia confusa</i> and <i>Bauhinia blakeana</i>.</p> <p>This is a man-made resource, and due to the roadside planting is less able to accommodate change and its overall sensitivity is considered to be medium.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR- 14.4	MTRC near Fanling Highway	Low	Low	High	Low
This LR is small section of the MTRC East Rail line running parallel to Fanling Highway. It has no planting associated with it, only noise barriers at its edges. This is a man-made resource which has a high ability to accommodate change. Its overall sensitivity is considered to be low .					

The baseline LCAs of FLN NDA are listed in **Table 12.6.4** and mapped in **Figures 12.8.0 (key plan)** and **Figures 12.8.1-7 (zoom ins)**. Illustrative photographs of the LCAs are presented in **Figures 12.8.8-9**

Table 12.6.4 - Landscape character areas and their sensitivity – FLN NDA (Refer to Figure 12.8.0 (key plan) and Figures 12.8.1-7 (zoom ins))

Id. No.	Landscape Character Area (LCA)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLCA-1	Natural Hillside Landscape	High	High	Low	High
<p>Refers to large hillside areas which are dominated by shrubland, grassland and some woodland in places such as the ravines.</p> <p>Within the Study Area for FLN NDA this LCA encompasses Cham Shan and Wa Shan to the north reaching 164 mPD and the foothills of Lung Shan to the south. Other area of this LCA found within the study area is at and Ling Hill. It is relatively at lower height and close to human activities.</p> <p>This LCA is predominantly natural and of high quality. It is a significant LCA within the Study Area and has a low tolerance to change. Therefore its sensitivity is considered to be high.</p>					
FLCA-2	Rural and Urban Peripheral Village Landscape	Medium	Medium	Medium	Medium
<p>Refers to rural village areas and village areas on the fringes of urban developments, including relic landscapes of former villages. This LCA is dominated by small or medium sized villages with modern and traditional houses and some temples, interspersed with small agricultural plots and comprises a broad mixture of other land uses including water ponds, schools, sports grounds, and playgrounds, some open storage areas and car parks. This LCA also has some patches of woodland as well as vegetation associated with the villages and park areas.</p> <p>Within the Study Area for FLN NDA this LCA is generally found at the foothills of the Cham Shan and Wa Shan along the northern bank of Ng Tung River such as at Fu Tei Au, as well as in other lowland areas near the river around Sheung Shui Heung and Shek Wu San Tsuen.</p> <p>This LCA is considered to have medium tolerance to change and be of moderate amenity value. Its sensitivity is therefore medium.</p>					
FLCA-3	Urban Development Landscape	Low	Low	High	Low
<p>Refers to urban areas with significant numbers of high-rise developments and extensive transport infrastructure. It also contains car parks and open areas associated with urban development such as playgrounds and small parks and sitting out areas. This LCA has limited natural vegetation but does include some man-made landscaping.</p> <p>Within the Study Area for FLN NDA this LCA is found only towards the south-western boundary including Sheung Shui and Fanling town centres, with buildings becoming more modern. It includes the high-rise developments such as Woodland Crest, Grand Regentville, Regentville, and Avon Park and some high rise estates such as Tin Ping Estate.</p> <p>This is an important residential landscape and has high tolerance to change. The sensitivity of this LCA is considered to be low.</p>					
FLCA-4	Industrial Landscape	Low	Low	High	Low
<p>Refers to areas comprising a broad mix of land uses including factories, utility facilities, workshops, open storage and some channelized water courses. It is normally located on low lying ground or at the base of hills and may include small and fragmented areas of residential houses and their associated agricultural land. There is little significant vegetation among this built environment, but small patches of vegetation do exist, particularly along the channelized river.</p> <p>Within the Study Area for FLN NDA this LCA is mainly comprised of factory buildings, vacant land and open storage. It includes the Fanling Industrial Area that is found between Sha Tau Kok Road and Ma Wat River channel. The Sheung Shui Slaughter House, Sheung Shui Water Treatment Works and Shek Wu Hui Sewage Treatment Works, at the west of the Study Area and the open storage uses along Man Kam To road are also included.</p> <p>This LCA contains man-made facilities that are able to accommodate change, particularly if they have been abandoned. Except for the significant planting along Ng Tung River, most areas in this LCA are exposed with the vegetation largely removed, resulting in a low landscape amenity. Therefore, the sensitivity of this LCA is considered to be low.</p>					
FLCA-5	Lowland Agricultural Landscape	Medium	Medium	Medium	Medium
<p>Refers to large areas dominated by agricultural land (active and abandoned) with scattered small villages and low-rise buildings and may also include some fishponds and irrigation ponds. This LCA is mostly found among lowlands and floodplain areas.</p> <p>Within the Study Area for FLN NDA the key area of this LCA is found at Tin Ping Shan Valley and Ma Shi Po. Tin Ping Shan (Sacred Hill) Valley is located to the west of Ng Tung River and contains both abandoned agricultural fields and drained concrete fishponds, as well as some active agricultural land. Ma Shi Po agricultural land is in the lowland area located to the east of Wu Nga Lok Yeung and south of Ng Tung River. The active agricultural land is fragmented with a mixed use of villages and light industry amongst some man-made woodland and nursery. The fragmented greenery pattern extends along the southern side of Ng Tung River.</p> <p>The value, quality and maturity of this LCA are medium, with many of the plots in the Ma Shi Po area now abandoned and overall the active plots being fragmented. In the right environment this LCA can accommodate reasonable change and its overall sensitivity is considered to be medium.</p>					
FLCA-6	Major Transportation Corridor Landscape	Low	Low	High	Low
<p>Refers to major highway and railway areas, with their scattered associated buildings.</p> <p>Within the Study Area for FLN NDA, Fanling Highway, Sha Tau Kok Road and MTRC East Railway are major transport routes stretching in a variety of directions and located at the east, west and south boundaries of the Study Area, connecting the FLN NDA with other adjacent areas.</p> <p>The LCA is considered to be highly tolerant to change and its sensitivity is low.</p>					

Id. No.	Landscape Character Area (LCA)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLCA-7	Major Water Course Corridor Landscape	Medium	Medium	Medium	Medium
<p>Refers to modified water courses channelized with concrete or grasscrete and also includes some walkways along the water course and the vegetation associated with the water course, both within the channel and along the banks as well as in the ridge of the banks.</p> <p>Within the Study Area of FLN NDA this LCA includes sections of Ng Tung River, Shek Sheung River, Sheung Yue River and Ma Wat River.</p> <p>The landscape amenity and significance of this LCA are medium. Due to its largely man-made state, it is reasonably tolerant to change and its sensitivity is considered to be medium.</p>					

12.7 Sources of Impacts

Section 12.5.2 details how the revised RODPs have already taken into consideration L&V impacts to reach the final layout. Some impacts from the Project, however, are inevitable. Potential L&V impacts from the construction phases of the various components of the NDAs generally result from:

- Site clearance including demolition of structures, tree removal/transplantation and other vegetation removal.
- Site formation works including cutting (e.g. slope formation for reservoir formation) and filling e.g. of streams and agricultural land (see **Sections 12.7.1-2** for further details of site formation including cut and fill).
- Stockpiling of construction and demolition materials, including existing topsoil, and storage of construction equipment and plants.
- Construction of at-grade and above ground facilities including residential blocks, government/ institutional facilities, bridges, viaducts, interchanges, roads, slip roads and noise barriers.
- Temporary structures within the Project Site including site offices and parking areas.
- Re-alignment of roads.
- Re-alignment of streams and watercourses.

Care has been taken to minimize site formation works by keeping all the proposed developments and infrastructures as close to the existing ground profile as possible and achieve an ultimate cut/ fill balance as far as possible. In addition drainage levels for the ultimate development scenario have been considered and in general, low-lying areas will be filled to an elevation just above the flood levels of ultimate scenario.

Further details of the site formation requirements in each NDA are given in **Sections 12.7.1 and 12.7.2** for KTN and FLN NDAs respectively and **Figures 12.11.5a-d and 12.12.5a-d** show cut/fill contour plans for each NDA.

During the operation phase, potential impacts are likely to result from:

- Operation of buildings including residential blocks and facilities, government facilities, sports facilities, sewerage treatment facilities etc.
- Operation of new roads including intersections and viaducts.
- Provision of open spaces.
- Provision of any noise mitigation structures.
- Residual impacts from loss of trees and vegetation during the construction phase.
- Landscaping works.

- Faunal barriers provided as part of the mitigation measures for ecological impacts.

Figure 12.9.0 illustrates the revised RODP and land site codes for KTN NDA, also showing it is divided into eight broad areas with the land sites labelled correspondingly. **Figures 12.9.1-2** explain the corresponding development parameters for each site. Figures are also provided to help illustrate landscape impacts in KTN NDA as specified in the impact assessment in **Section 12.8**. The VSR locations and locations of the new developments in KTN NDA are shown in **Figures 12.18.0 and 12.18.1**.

Figures 12.10.0.1-2 illustrate the revised RODP and land site codes for FLN NDA RODP, also showing it is divided into four broad areas with the land sites labelled correspondingly. **Figures 12.10.1-2** explain the corresponding development parameters for each site. Figures are also provided to help illustrate landscape impacts in FLN NDA as specified in the impact assessment in **Section 12.8**.

Sections 12.7.1 and 12.7.2 provide further details of the site formation required to achieve these revised RODP for KTN NDA and FLN NDA respectively.

12.7.1 Details of Site Formation Impacts – KTN NDA

In KTN NDA, the eastern portion along Sheung Yue River is generally low-lying subject to residual flood risk and filling is proposed to this area up to the existing river bank level. On the western portion some excavation is required and extensive excavation at the service reservoir sites but in general KTN NDA will require a net general fill import after the refinement. Further details of the site formation impacts caused during construction in each KTN general area are provided below and **Figure 12.11.5** provides a plan of the cut/fill contours for this NDA:

- **A sites - Town Centre & North Residential Area.** The Town Centre is the area around the proposed Kwu Tung Station and the North Residential Area is located to the immediate north of the Town Centre. During construction, proposed site formation levels are close to the existing ground levels and minimal cut-fill activities are generally anticipated in site formation works.
- **B sites - Commercial Research & Development Area/ Community Facilities Area.** The Commercial Research & Development Area/ Community Facilities Area is located in the southern part of the KTN NDA. Since existing ground levels are generally lower than the proposed site formation levels, fill activity would be required and potentially retaining walls. The proposed district cooling system at B1-7 in particular may require extensive cut/fill activity.
- **C sites - Long Valley Ecological Area.** Long Valley Ecological Area contains the Nature Park and the adjoining agricultural land. No site formation works will be proposed in this area of particular ecological importance.

- **D sites - Tranquil Rural Residential Area.** The Tranquil Rural Residential Area is located to the west of Sheung Yue River and the Long Valley Ecological Area. Proposed site formation levels are close to the existing ground levels and there would be minimal cut-fill activities in site formation works with most cut/fill work required at sites D1-12 and D1-13 which are proposed as potential activity centres. The site formation strategy for this Area is to form cut/fill slopes as the interface between proposed roads and each land cluster and preliminary stability assessments suggest no cut/fill slope angles would exceed 40° , to satisfy the requirement of a minimum Factor of Safety of 1.4. No site formation works are proposed in Ho Sheung Heung and Ho Sheung Heung Fung Shui Woodland.
- **E sites - Recreational Area.** This Area is located in the north-western portion of the KTN NDA including the sports ground, sports centre, swimming pool, potential activity centres and the Fung Kong Shan Park. In view of the existing ground levels, filling works would be involved in the site formation works. The existing Fung Kong Shan located at the east of the Area is to be preserved with no site formation works.
- **F sites - Research and Development Area.** This Area is located at the northwestern end of KTN NDA. The site formation strategy for this Area is to form cut / fill slopes at the interface between proposed roads and each land clusters. Based on preliminary stability assessment, the proposed cut / fill slope angle would not exceed 40° to satisfy the requirement of minimum Factor of Safety of 1.4.
- **G sites - Government Facility Area.** The Government Facility Area is located in the northern portion of KTN NDA and most of this area will be preserved as existing, including the Lo Wu Firing Range in G1-1 and Lo Wu Saddle Club in G1-6 and G1-7.

The notable exceptions in this area are for the construction of the Flushing Water Service Reservoir at G1-4, the Fresh Water Service Reservoir at G1-5 and the access road to them, which will require formation works and will be a key source of excavation in this NDA. The impact assessment for the LVIA is based on preliminary studies stating cut/ fill slope formations will be a maximum of 38 m high at G1-4 and 53 m high at G1-5 with the proposed cut/fill slope angle not exceeding 40° , to satisfy the requirement of a minimum Factor of Safety of 1.4. The height of the exposed slopes after completion will drop to 32 m and 46 m for G1-4 and G1-5 respectively as some of the slope will be buried underground. **Figures 12.11.6 and 12.11.7** provide indicative sections of the reservoirs and topographical illustrations respectively. Although the LVIA assessments are based on the above stated parameters, this is considered the worst case scenario. Further studies at the detailed design stage may succeed in reducing the extent of site formation and reducing landscape and visual impacts.

- **H sites - Hilly Terrain Area.** The Hilly Terrain Area is located in the north-west of the KTN NDA. Most of the area will be preserved as existing, including the retention of the Ma Tso Lung Restored Landfill within this area.

- **Roads.** There is a general site formation strategy in D and F Sites to form cut/fill slopes as the interface between proposed roads and each land cluster and preliminary stability assessments suggest no cut/fill slope angles would exceed 40°. The road and interchange formation works at the western boundary of NDA area, will require up to +29mPD site formation leading to steep cut-slope formation which will have to be stabilised with soil nails. These new road works and interchange are a Schedule 2 DP and further details can be found in **DP Package 12A**.

12.7.2 Details of Site Formation Impacts – FLN NDA

In FLN NDA, the whole area along Ng Tung River is generally low-lying subject to residual flood level. Filling is proposed in this area up to the existing river bank level and overall FLN NDA will require a net general fill import. Further details of the impacts caused by site formation during construction in each FLN general area are provided below and **Figure 12.12.5** provides a plan of the cut/fill contours for this NDA.

- **A sites - Government Facilities Zone.** The Government Facilities Zone is located in the north- western end of the FLN NDA and to the north of Ng Tung River. Site formation is mainly required for the Police Driving and Traffic Training Complex in the area and cut/fill slope angle would not exceed 40°. The proposed site formation levels to sewage treatment works range from +6.5mPD adjacent to Ng Tung River, to +12.0mPD adjacent to the Fu Tei Au Road at the northern boundary of the area.

Additionally cut/fill works will be required for the proposed Fresh Water Service Reservoir at Table Hill and access route. The impact assessment for the LVIA is based on preliminary studies stating the highest cut/fill slope formation will be approximately 24 m with the angle not exceeding 40°. The slope exposed after completion is 18 m due to some being underground. **Figures 12.12.6 and 12.11.8** provide indicative sections of the reservoir and topographical illustrations respectively. The LVIA assessments are based on the above stated information, which is considered the worst case scenario. Further studies at the detailed design stage may succeed in reducing the extent of site formation and reducing landscape and visual impacts.

The existing levels of nullah, Ng Tung River, Dong Jiang Water mains, Fu Tei Au Road and any designated areas (such as structures with historical value or preserved green areas) are to be preserved. In addition the large area of A1-3 and A1-9 will be designated as agricultural land and minimal, if any, cut/fill will be required here.

- **B sites – West Residential Area.** The West Residential Area is located at the middle portion of the FLN NDA, on the eastern side of the Government Facilities Zone. Site formation will ensure cut/fill slope angles would not exceed 40°.
- **C sites - Civic and Recreation Area.** The Civic and Recreation Area is located in the middle of the FLN NDA, mainly occupied by a Central Park with a range of social facilities in the vicinity. The proposed site formation

levels range from +8mPD in most planned areas. Since formation levels are close to the existing ground levels, minor site formation works with cut/fill slope less than 3m level difference are anticipated. The existing levels of nullah, Ng Tung River, and any designated areas (such as structures with historical value or preserved green areas) are to be preserved.

- **D sites - District Centre.** The District Centre is located in the south-eastern part of FLN NDA. The proposed site formation levels range from +8.0 mPD adjacent to Ng Tung River to +12.2 mPD adjacent to Ma Sik Road. Since formation levels are close to the existing ground levels, minor site formation works with cut/fill slope less than 3 m level difference are anticipated in most of the area.

Some cut/fill will also be required for the Flushing Water Service Reservoir at site D4-1 and access road. The impact assessment for the LVIA is based on the highest cut/fill slope formation being approximately 62 m with the angle not exceeding 40°. The slope exposed after completion is 56 m since some will be underground. **Figures 12.12.7 and 12.11.9** provide indicative sections of the reservoir and topographical illustrations respectively. The LVIA assessments are based on the above stated information, which is considered the worst case scenario. Further studies at the detailed design stage may succeed in reducing the extent of site formation and reducing landscape and visual impacts.

The existing levels of nullah, Ng Tung River, and any designated areas (such as structures with historical value or preserved green areas) are to be preserved.

Roads. Areas where cut/fill will be required for roads in FLN NDA include in the Civic and Recreation Area (C-Sites) where up to +9.5mPD would be required for some proposed roads, and at the at-grade roundabout connecting eastern and western section of proposed Fanling Bypass, cut and fill in excess of 3 m level difference would be required. This roundabout is part of the Schedule 2 DP and further details are provided in **DP Package 12D**.

12.8 Landscape Impact Assessment

The landscape impact assessment has been carried out considering baseline LR and LCAs described in **Section 12.6** and potential impacts described in **Section 12.7**, according to the methodology described in **Section 12.4**.

Section 12.8.1 describes the magnitude of change to each LR and LCA and then **Section 12.8.2** reports the significance of landscape impacts before mitigation, calculated according to the matrix provided in **Table 12.4.1**. Mitigation measures are then described in **Section 12.9**. **Section 12.9.1** reports the significance of residual landscape impacts upon mitigation, providing details of the mitigation for the most affected LR and LCAs.

1. 12.8.1 Magnitude of Landscape Changes

The magnitudes of change caused by the Project impacts are discussed for KTN NDA and FLN NDA in **Sections 12.8.1.1 and 12.8.1.2** respectively. The significance of these impacts before mitigation is discussed in **Section 12.8.2**.

12.8.1.1 Kwu Tung North NDA

The magnitudes of change to KTN NDA LR and LCAs are detailed in **Tables 12.8.1 and 12.8.2** respectively.

Figures 12.11.0-12.11.4 and 12.13.0-12.13.4 help to illustrate these landscape impacts on LR and LCAs respectively. **Figure 12.11.5a-d** also illustrates the cut/fill contour plan for KTN NDA.

Noting that almost no LR or LCAs had 'local, regional, national or global importance' nor 'statutory or regulatory limitations / requirements relating to the landscape resources / character areas', details of these parameters are only given in the descriptive text, where necessary.

Table 12.8.1 - Magnitude of change to KTN NDA LRs

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR 1 Channelized Water Course													
KLR-1.1	Ng Tung River	C2-6(O)	Length of LR in Study Area: 1450 m	Length within the NDA: 120 m Length affected: 0 m (0%)	Small	Good	Good	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> Ng Tung River is mainly outside the RODP but small sections of bank lies within the open space (C2-6). This area will not be modified and it will remain compatible with these small sections of river. Therefore this LR will not be impacted by the Project and the magnitude of change is negligible.											
KLR-1.2	Shek Sheung River	C1-5(GB); C1-6(AGR); C1-7, C1-8 both (O)	Length of LR in Study Area: 2260 m	Length within the NDA: 1360 m Length affected: 0 m (0%)	Small	Good	Good	Temporary (Short Term)	Permanent	Reversible	Irreversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> Shek Sheung River mainly flows outside the KTN NDA boundary but a small section of its west bank lies within the NDA boundary, in the Long Valley area, bordering agricultural land, rural development area and an area of plantation. This corresponds with where site C1-6 (agricultural land) and site C1-5 (green belt) fall. These sites will not undergo changes affecting the River. Part of the river bank is grasscrete and is also compatible with the sites C1-7, C1-8 (open space) which partially fall on it. It is unlikely this LR will be affected by the Project; therefore magnitude of change is negligible during construction and operation.											
KLR-1.3	Sheung Yue River	DP3 Road P1 and P2 associated new Kwu Tung Interchange where it crosses the river; B3-3, B3-4, B3-9, C2-1, all (O); C2-2 (AGR); (C1-9 (OU-Nature Park); B3-10, C1-10 both (A); B3-5, B3-8, B3-12 all (OU-C,R&D); B3-16(OU-VC); D1-3(OU-SPS); D1-5(R4); D1-9(V)	Length of LR in Study Area: 2540 m	Length within the NDA: 2000 m Length affected: 80 m (<5%)	Small	Good	Good	Temporary (Short Term)	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> Sheung Yue River bisects the eastern corner of the KTN NDA and its eastern bank borders Long Valley agricultural land while its western bank borders agricultural land and rural development areas. Most of the sites impacting on this LR have similar land use to the current land use e.g. B3-3, B3-4, B3-9, C2-1, C2-6 (open space), C2-2 (agricultural land) and lie on the river grasscrete banks or adjacent to them. The proposed Long Valley Nature Park (C1-9) lies on the eastern banks of the river. All these areas act as buffers to the river and will remain unchanged. A very small section of the river bank will suffer some impact from the edge of land Sites B3-5, B3-8 and B3-12, designated for Commercial, Research and Development use, during site formation works and equally a small section of the river bank may be affected during construction of the new road leading from the Kwu Tung interchange to meet Fanling Highway. The overall magnitude of change for this LR is small during construction but during operation will be negligible.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR-1.4	Water Course Network in Long Valley	DP3 Road P1 and P2 associated new Kwu Tung Interchange; B3-12(OU-C,R&D), B3-14(A), C1-9(OU-NP), C1-10(A)	Length of LR in Study Area: 2270 m	Length within the NDA: 2270 m Length affected: 400 m (15 %)	Medium	Fair	Fair	Temporary (Short Term)	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> All this network of watercourse in the Long Valley area fall within the RODP, but the majority will not be adversely affected by the Project as they fall within C1-9 designated to become a Nature Park where this network will be preserved. Nearer Fanling highway, the watercourses converge and here this LR will be affected by land use that is incompatible with it such as commercial, research and development buildings. The amenity areas (B3-14, C1-10) that affect it are associated with the new road P1 here and along with the road, during site formation, will affect the watercourse. Currently this LR leads into a box culvert and the downstream section near here also be diverted into box culverts. The magnitude of change is considered to be intermediate during construction and operation											
KLR 2 Water Course													
KLR-2.1	Streams in Kwu Tung	DP3 Road P1 and P2 associated new Kwu Tung Interchange; DP4 Roads D1 to D5; A1-1;A2-1, A2-10, D1-6 all (A); A1-8(R1c), A1-9(R2), A1-2, A2-2, A2-4, A2-5, A2-7, A2-9, A3-3,D1-7 all (PRH), (R1c), (R2) of (R3); A2-11 (E) A1-10, A2-3, A2-6, E1-7 all (O) B3-5(OU), B3-8(OU-C,R&D), D1-1(O), D1-2(OU-RAF), D1-4(O), D1-5(R4)	Length of LR in Study Area: 4130 m	Length within the NDA: 4130 m Length affected: 4130 m (100%)	Large	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> These streams are located in the central area of KTN NDA and will be impacted by sites for many different uses including mainly buildings for residential uses, a primary school, amenities, open space, railway associated facilities and commercial, research & development buildings. During construction these streams will be removed during site formation works for these sites. Overall this LR will be permanently lost due to new facilities with poor compatibility and the magnitude of change during construction and operation is large.											
KLR-2.2	Natural Streams at Tai Shek Mo	G1-3 (GB)	Length of LR in Study Area: 1630 m	Length within the NDA: 500 m (0%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> Most of these streams are located outside the RODP boundary and the Project will have no impact on them. Two short streams, likely to be dry during the dry season, fall within the RODP near the Lo Wu Correctional Institution, mainly amongst woodland at the foot of Tai Shek Mo. Both these streams fall in G1-3 which is designated for 'green belt' and therefore they will not be affected. Overall the magnitude of change during construction and operation is negligible.											
KLR-2.3	Natural Streams at Ki Lun Shan	Outside RODP boundary	Length of LR in Study Area: 1410 m	Length within the NDA: 0 m	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> These streams are located outside the RODP boundary and the Project will have no impact on them.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR-2.4	Natural Streams at Ma Tso Lung	RoadR1; E1-2(E), F1-8(AGR), E1-6(G), F1-3(OU-R&D), F1-7(O); G1-1(OU-FR), G1-9 (A), G1-3, F1-5 and H1-1 all (GB)	Length of LR in Study Area: 6500 m	Length within the NDA: 3670 m Length of LR affected: 580 m (15%)	Medium	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> Major sections of the stream will not be impacted as they are located within the green belt zone (G1-3, F1-5, H1-1), Lo Wu Firing Range (G1-1), land designated for Agriculture (F1-8) and amenity area (G1-9) where no change will occur. Impacted stream sections are those within sites designated for various incompatible uses most notably the primary school (E1-2) and Research and Development buildings in support of Lok Ma Chau Loop Development (F1-3) and possibly a tiny section by the fire station cum ambulance depot (E1-6). Parts of some of the streams would be lost without mitigation during construction, but large sections of the streams have been avoided when planning the RODP through green belt designation or providing buffer zones around the stream within sites. In addition parts of the stream in conflict with the R1 road running between F1-1 and F1-3 will be diverted and overall the magnitude of change for this LR is intermediate.											
KLR 3 Water Pond													
KLR-3.1	Ho Sheung Heung Water Ponds	DP3 Road P1 and P2 associated new Kwu Tung Interchange; C2-2 (AGR); D1-9(V); D1-7 (R2)	10.24	9.96 (10%)	Medium	Fair	Fair	Permanent	Permanent	Irreversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> One pond of this LR is outside the RODP but the majority is within and will be affected by sites C2-2, designated for agriculture and therefore likely to remain unchanged. One pond within the RODP lies within site D1-9, in the existing Ho Sheung Heung village area; it is designated for 'village type development' and also unlikely to be modified. Another reasonably large pond south of Ho Sheung Heung (~ 1 ha) will be impacted by construction of a road interchange and residential developments (D1-7). This pond will be filled during site formation works during construction and permanently lost, but given most ponds remain unaffected the overall impact on this LR is intermediate.											
KLR-3.2	Long Valley Water Ponds	C1-9 (OU-Nature Park)	3.69	3.69 (0%)	n/a	Good	Good	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> Although all these ponds lie within the RODP, they fall within a site designated for a Nature Park (C1-9) and will therefore not be negatively affected by the Project and therefore the impact on this LR is considered to be negligible both during construction and operation.											
KLR-3.3	Fung Kong Shan Water Ponds	E1-5(G-REC); A3-3(PRH)	1.12	1.12 (100%)	Large	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> All the ponds in this LR lie within the RODP boundary and will be affected by sites designated for government sports facilities (E1-5) and public rental housing (A3-3) which are not compatible with this LR. The ponds will be filled during site formation and the magnitude of change is therefore considered to be large both during construction and operation.											
KLR-3.4	Fu Tei Au Water Ponds	Outside RODP boundary	0.69	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> These ponds are located outside the RODP boundary and therefore the Project will have no impact on them.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR-3.5	Water Ponds beside Kam Hang Road	Outside RODP boundary	0.27	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> These ponds are located outside the RODP boundary and therefore the Project will have no impact on them.											
KLR-3.6	Water Ponds at Pak Shek Au	DP2: Castle Peak Road Division; B1-8, B1-9, B2-1 all (A); B2-2(G)	0.23	0.23 (100%)	Large	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> The ponds of this LR are all within the RODP and will be affected by sites designated for amenities (B1-8, B1-9, B2-1) or a hospital and polyclinics (B2-2) which are not compatible with this LR. The ponds will be filled during site formation and the magnitude of change is therefore considered to be large both during construction and operation.											
KLR-3.7	Water Ponds at Tit Hang	H1-1(GB)	0.20	0.06 (0%)	n/a	Good	Good	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> One of the ponds at Tit Hang falls outside the RODP, while the other is within on a site of land designated as green belt (H1-1), so the Project will not have an impact on either of these ponds, making the magnitude of change negligible.											
KLR-3.8	Water Ponds within the Closed Area	Outside RODP boundary	9.03	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> These ponds are located outside the RODP boundary and therefore the Project will have no impact on them.											
KLR-3.9	Kam Tsin Tsuen Pond	Outside RODP boundary	0.40	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This pond is located outside the RODP boundary and therefore the Project will have no impact on it.											
KLR-3.10	Wai Loi Tsuen Water Pond	Outside RODP boundary	0.23	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This pond is located outside the RODP boundary and therefore the Project will have no impact on it.											
KLR 4 Marsh													
KLR-4.1	Marshes in Long Valley	C1-9 (OU-Nature Park)	2.65	2.65 (0%)	n/a	Good	Good	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> Although all these marsh areas lie within the RODP, they fall within a site designated for ‘Nature Park’ (C1-9) and will therefore remain unchanged. Magnitude of change to this LR is considered to be negligible both during construction and operation.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR-4.2	Mitigation Wetland	C1-9(OU-Nature Park); B3-4,B3-9 both (O);B3-5 (OU-C,R&D); C1-10(A)	1.30	1.30 (20%)	Small	Fair	Fair	Temporary Medium Term	Permanent	Temporary Medium Term	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> All this LR lies within the RODP and roughly two thirds of it within a site designated for 'Nature Park' (C1-9) which will therefore not be adversely affected by the Project. One small area of this LR lies on a site designated as 'open space' along the river (B3-9) and is also unlikely to be affected by the Project. However the remaining small area will be affected by sites designated for amenities (C1-10) and commercial, research and development (B3-5), which are not compatible land uses, and this small area will be irreversibly lost during site formation works during construction. The magnitude of change to this LR is considered to be small overall at construction and operation since most of the area will remain unaffected.											
KLR-4.3	Wetland/ Marsh in the Closed Area	Outside RODP boundary	4.09	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> These marsh areas are located outside the RODP boundary and therefore the Project will have no impact on them.											
KLR-4.4	Marsh around Pai Tau Lo and Tsung Yeun	C2-2, C2-4 both (AGR)	2.10	2.10 (0 %)	Small	Good	Good	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> All this LR is within the RODP boundary but falls on land designated as 'agricultural land' and therefore the magnitude of change due to the Project is negligible.											
KLR 5 Plantation													
KLR-5.1	Plantation South of Fanling Highway	Outside RODP boundary	4.87	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This plantation is located outside the RODP boundary and therefore the Project will have no impact on it.											
KLR-5.2	Plantation in the Vicinity of Hakka Wai	C1-5(GB), C1-6(AGR)	6.95	4.88 (0%)	n/a	Good	Good	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> Roughly a third of this LR is outside the RODP boundary. Of the area within the RODP, roughly half is designated as 'green belt' (C1-5) and will not be affected. The other half is on land designated as 'agriculture' (C1-6) within Long Valley and no site formation works or construction activities are proposed here so it will not be adversely affected. Overall the magnitude of change due to the Project is negligible.											
KLR-5.3	Plantation in the Vicinity of Wai Loi Tsuen	Outside RODP boundary	2.65	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This plantation is located outside the RODP boundary and therefore the Project will have no impact on it.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR-5.4	OVTs along Fanling Highway and Castle Peak Road	DP1 San Tin Highway and Fanling Highway;	5 trees	All within NDA boundary; all due to be retained	Small	Fair	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> The five OVTs within plantation along Fanling Highway and Castle Peak Road will all be retained during the Project. Although the DP1 San Tin Highway and Fanling Highway proposed alignment is in close proximity, it avoids the trees. For worst case scenario, however, works in the vicinity of the trees during construction may affect them (e.g. their roots) and therefore magnitude of change prior to any mitigation, is considered potentially small. Should the trees have been affected by the construction works, this will likely continue at operation, therefore the magnitude of change prior to mitigation is also cautiously considered to be potentially small.											
KLR 6 Hillside Woodland													
KLR-6.1	Ki Lun Shan Hillside Woodland	Outside RODP boundary	23.72	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This woodland is located outside the RODP boundary and therefore the Project will have no impact on it.											
KLR-6.2	Tai Shek Mo Hillside Woodland	D1-11(R2); D1-12 (G-REC); G1-3 (GB); G1-6 (G)	5.89	4.65 (10%)	Small	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> While most of this woodland is outside the RODP boundary, some areas east of Fung Kong Shan fall within land designated Green Belt (G1-3) and woodland here will not be affected by the Project. Roughly 0.5 ha lies within D1-12 designated as a potential activities centre where adverse impact by site formation is expected. A very small area of this LR falls within D-11 designated for residential use and although it does not fall under any proposed buildings and it is likely that trees in this area could avoid impact, they may be affected during site formation works and site clearance in the construction phase. Another small area of this LR lies within the site for Lo Wu Saddle Club (G1-6) and no change to the land use will occur here, so the woodland will not be affected. Overall the land use affecting this LR is considered to be fairly compatible but given approximately 0.5 ha or less of woodland will potentially be lost, the magnitude of change is considered intermediate.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR-6.3	Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong	DP4 Roads D1 to D5; E1-8, F1-6, G1-3, H1-1 all (GB); A1-10, E1-1, E1-7 all (O); G1-1, G1-2 both (OU-FR); F1-3(OU-R&D), F1-6 (GB); F1-1, E1-5 (G- REC), E1-9 (OU-RCP) A1-1, A2-1, D1-15, G1-9 (A), A1-2(PRH-LR), A2-2 (PRH), A3-4(E); B2-2, D1-14, E1-5, E1-6, F1-4 all (G)	49.93	32.90 (40%)	Large	Poor	Poor	Temporary Medium Term	Permanent	Reversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> Two patches of this woodland near Chau Tau are outside the RODP boundary and much of this LR area (particularly in the west of the NDA, but some patches further east too) lies on land designated as 'green belt' (E1-8, F1-6, G1-3, H1-1), and a tiny area on E1-7 designated as 'green spine, open space and Fung Kong Shan, cycling park'. Woodland in these areas is considered to remain unaffected by the Project and equally so in the former Ma Tso Lung landfill site (E1-1) also designated for open space. Some of this LR also lies along the edge of the Lo Wu Rifle Range (G1-2) and at this site the trees will remain as the rifle range will not be changed. Site A1-10 which also affects part of this LR and is designated as open space, is expected to be landscaped between development areas and therefore trees in this area are likely to be affected during site formation. Some of the area of this LR is on land designated for Research and Development in support of Lok Ma Chau Loop Development (F1-3) and Government Reserve (D1-14) and this land use would appear to be incompatible with the present use. About another quarter of the LR lies on sites designated for incompatible land use, such as fire station cum ambulance depot" (E1-6), refuse collection point (E1-9), building of a standard swimming pool (E1-5), public rental housing (A1-2, A2-2), building of a primary school at the southern base of Fung Kong Shan (A3-4), building of a hospital, polyclinic and clinic and refuse collection point (B2-2) and building of amenities such as roads (A1-1, A2-1, D1-15, G1-9). Woodland in these areas will be adversely impacted with trees being cleared during site clearance and site formation in the construction phase. During operation, the land use in these sites will have changed completely and the impacts remain. Although relatively only about a third of the LR within the RODP is adversely impacted, the overall size affected is still large (about 8 ha) and so the magnitude of change is considered to be large overall.											
KLR-6.4	Ho Sheung Heung Fung Shui Woodland	D1-8(GB), D1-11(R2)	7.30	7.30 (<10%)	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> The majority of this woodland falls on land designated as 'green belt' for fung shui woodland (D1-8) and will not be affected at all. Tiny patches on the borders of the woodland area may be affected by land designated for residential development (D1-11) and a road. Some trees in these small areas may be cleared during site clearance and formation in the construction phase, but this will be relatively minor and overall magnitude of change is considered small.											
KLR 7 Lowland Woodland													
KLR-7.1	Kwu Tung South Road Lowland Woodland	Outside RODP boundary	2.33	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This woodland is located outside the RODP boundary and therefore the Project will have no impact on it.											
KLR-7.2	Lowland Woodland in the Vicinity of Kam Tsin	Outside RODP boundary	10.14	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This woodland is located outside the RODP boundary and therefore the Project will have no impact on it.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR-7.3	Lowland Woodland in Pak Shek Au and Tong Kok	DP1: San Tin Highway and Fanling Highway Kwu Tung Section; DP2: Castle Peak Road Division; DP3 Road P1 and associated new Pak Shek Au Interchange; DP4 Roads D1 and D4; B1-3 both (GB); B1-7(OU-DCS); B1-1, B1-4, B1-6, B1-8, B1-9, B2-1, B2-3 all (A); B2-2 (G); B2-4 (IC); A1-5 (CDA); B2-5, B2-6, B2-7 all (E); A1-2 (PRH- LR), A1-4 (R1c), A2-9(R2); A1-3, A1-10 both (O)	13.63	13.63 (85%)	Large	Poor	Poor	Temporary Medium Term	Permanent	Irreversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> All this LR lies within the RODP boundary but about 2 ha is on land designated as green belt (B1-3) and will not be affected. The majority, however, is on land designated for land use incompatible with the current LR e.g. for the District Cooling System (B1-7), 'amenities' (B1-1, B1-4, B1-6, B1-8, B1-9, B2-1, B2-3), for a hospital, polyclinic/specialist clinic (B2-2), CLP substation (B2-4), a public transport interchange (A1-5), nursery class and kindergarten buildings (within A1-4 and A1-5), primary and secondary schools (B2-5, B2-6, B2-7), residential developments (A1-2, A1-4, A2-9) and the open spaces between buildings (A1-3, A1-10). Trees in all these areas may be lost during site clearance and formation works. The overall magnitude of change is considered large.											
KLR-7.4	Sheung Shui Water Treatment Works Lowland Woodland	Outside RODP boundary	0.98	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This woodland is located outside the RODP boundary and therefore the Project will have no impact on it.											
KLR-7.5	Vernon Pass Woodland	Outside RODP boundary	1.79	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This woodland is located outside the RODP boundary and therefore the Project will have no impact on it.											
KLR 8 Shrubland / Grassland Mosaic													
KLR-8.1	Ki Lun Shan Shrubland / Grassland Mosaic	Outside RODP boundary	21.71	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This shrubland/grassland is located outside the RODP boundary and therefore the Project will have no impact on it.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR-8.2	Fung Kong Shan Shrubland / Grassland Mosaic	DP4: KTN NDA Road D1 to D5; A3-4(E), E1-7 (O); E1-8 (GB)	10.08	10.08 (<5%)	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> Most of this shrubland/grassland is located on site E1-8 which is designated as 'green belt', and will not be impacted at all. Very small patches on the borders of the shrubland/grassland area may be affected by site E1-7 designated for 'green spine, open space, Fung Kong Shan, Cycling Park', a road and a school site at Site A3-4. During construction, this may be affected by some site formation work, but this will be relatively minor and given the small area and good compatibility at operation, overall magnitude of change is considered small.											
KLR-8.3	Shrubland / Grassland Mosaic in Tai Shek Mo and the Western Ranges Foothills	DP3 Road P1 and P2 associated new Kwu Tung Interchange; DP4 Roads D1 and D4; and DP7 Utilization of Treated Sewage Effluent (reservoir at G1-4); B1-1(A); D1-8(GB), D1-11(R2), D1-12, D1-13 both (G-REC)), D1-14(G); F1-1(G-REC), F1-2 (OU-SPS), F1-3 (OU-R&D), F1-8(AGR); F1-7(O); G1-3, H1-1 both (GB); G1-4, G1-5, G1-6 all (G)	230.40	73. 47 (15%)	Medium	Fair	Fair	Temporary Short Term	Permanent	Irreversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> Most of this shrubland/grassland is located outside the RODP boundary and the Project will have no impact on it. The majority within the RODP boundary lies on sites designated as 'green belt' (D1-8, G1-3, H1-1) and will also not be affected by the Project and a very small area falls within Lo Wu Saddle Club (G1-6) and agricultural land (F1-8) where the land use will not change either. Two sites of just under 3 ha total area designated for 'service reservoirs' (G1-4, G1-5) are located in this LR, and will require considerable site formation for their construction and affect more of this LR for the construction of their access roads. The preliminary design of the reservoirs proposes cut/ fill slopes of up to 38 m for the flushing water reservoir at G1-4, and up to 53 m for the fresh water reservoir at G1-5. At completion exposed slopes will be 32 m and 46 m respectively. The overall topography of this area will be changed as Figures 12.11.5a-d and 12.11.6-7 help illustrate. The existing vegetation in these areas will be lost although there is potential for landscaping of the reservoir roofs and cut/ fill slopes and remediation in future. In addition, sites affected by D1-14 (government reserve), F1-3 designated for Research and Development in support of Lok Ma Chau Loop development, D1-12 and D1-13 potentially designated for activity centres and F1-2 sewage pumping station may be adversely impacted by site formation works. Overall although a relatively small area is affected, given the potentially large topographical changes due to the reservoirs and their access roads, the magnitude of change is considered to be large at both construction and operation.											
KLR-8.4	Shrubland / Grassland Mosaic along Sheung Yue River, Ng Tung River and Fanling Highway	C2-2, C2-5 both (AGR)	10.50	2.69 (0%)	n/a	Good	Good	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This shrubland/grassland is half located outside the RODP boundary but the area within the RODP falls on land designated as 'agricultural' (C2-2, C2-5) and essentially LRs in these sites will remain unchanged. Therefore overall the Project will not affect this LR.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR-8.5	Fu Tei Au Shrubland / Grassland Mosaic	Outside RODP boundary	4.28	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This shrubland/grassland is located outside the RODP boundary and therefore the Project will have no impact on it.											
KLR 9 Agricultural Land													
KLR-9.1	Long Valley Agricultural Land	DP3 Road P1 and P2 associated new Kwu Tung Interchange B3-12 (OU-C,R&D); B3-9 (O), B3-14, C1-10 both (A); C1-6 (AGR), C1-9 (OU-Nature Park),	38.84	38.84 (5%)	Medium	Poor	Poor	Temporary Medium Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> All this agricultural land lies within the RODP boundary but mostly on land designated for 'agriculture' (C1-6) or 'Nature Park' (C1-9) and there will be no land use change and no adverse impact from the Project here. However an area of roughly 2 ha lies on land designated for 'commercial, research and development' buildings (B3-12) which will cause a land use change and adversely impact this area. The magnitude of change is considered to be intermediate given the overall size of the area adversely impacted.											
KLR-9.2	Ho Sheung Heung Agricultural Land	C2-1 (O), C2-2 (AGR); D1-9(V)	8.96	8.96 (5%)	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> All this agricultural land is located within the RODP boundary, the vast majority lies on land designated for 'agriculture' (C2-2) and therefore will not suffer any changes due to the Project. A small part of it lies on C2-1 designated as ‘open space’ along Sheung Yue River and is unlikely to suffer any impacts or land use change. One section falls within the existing Ho Sheung Heung village area of site D1-9 and will experience no change. The worst case scenario is that magnitude of change to this LR will be small.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR-9.3	Agricultural Lands in Shek Tsai Leng, Tong Kok and Tung Fong	DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement; DP4: KTN NDA Road D1 to D5; DP5 new SPS at D1-3; A1-9, A2-9, A3-6 all (R2); A1-10 (O); A2-7, A3- 3 both (PRH); A2-10 (A); A2-11, A2-12, A2-13 all (E); B3-2, B3-5, B3-8 all (OU-C,D&R); B3-6, B3-7 both (A), B3-16 (OU-VC); D1-1, D1-4 both (O); D1-2 (OU-RAF); D1-6 (A); D1-5 (R4); D1-7(R2)	11.93	11.93 (100%)	Large	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> The majority of this agricultural land lies on land designated for development of some type, such as residential (A1-9, A2-7, A2-9, A3-3, A3-6, D1-7), railway associated facilities (D1-2), sewage pumping station (D1-3), schools (e.g. A2-11, A2-12, A2-13), commercial, research and development (B3-2, B3-5, B3-8), amenities (A2-10, B3-6, B3-7, D1-6), etc. and will be adversely affected by the Project; during construction site clearance will remove vegetation and site formation will also affect these sites. During operation the land use will have changed completely. Small areas of this LR lie on land designated as 'open space' (e.g. A1-10, D1-1, D1-4) but these are open spaces that are likely to undergo site formation prior to landscaping and as such the LR will be changed here also. Overall magnitude of change is considered large											
KLR-9.4	Other Agricultural Lands in KTN	DP1: San Tin Highway and Fanling Highway Kwu Tung Section; DP2: Castle Peak Road Division; B1-8, B1-9, B2-1 all (A), B2-2(G); C1-2 (A), C1-3 (CDA), C1-4 (V).	9.05	2.75 (90%)	Medium	Poor	Poor	Temporary Medium Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> The majority of this agricultural land lies outside the RODP boundary and will not be affected. The areas that will be affected, will be affected by site clearance and formation during construction and these include: an area near Pak Shek Au on land designated for building of a hospital (B2-2) and amenities (B1-8, B1-9, B2-1); and a small area on land designated for 'comprehensive development area' (about 1.7 ha) at (C1-3). During operation there will have been a complete land use change at these small areas. Although the majority of this LR is not affected, a sizeable area (about 3 ha) will be lost and the overall magnitude of change is considered intermediate.											
KLR-9.5	Other Orchard Areas in KTN	E1-7(O), E1-8(GB); F1-1(G-REC), F1-3 (OU-R&D), F1-7(O); H1-1(GB)	9.57	1.76 (70%)	Small	Poor	Poor	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> The majority of this LR is outside the RODP boundary and will not be affected. A few small areas lie within the RODP. The areas located at Fung Kong Shan and Ma Tso Lung are designated as 'green belt' (E1-8 and H1-1) which will not be affected by the Project. The other areas within the RODP will be affected by site clearance and formation during construction and these include a small area at Ma Tso Lung on land designated for Research and Development in Support of Lok Ma Chau Loop Development (F1-3), a sports ground/ sports complex at (F1-1), open space (E1-7, F1-7) and the road R1. During operation there will have been a land use change at these small areas, apart from within the green belt but overall only approximately 1 ha of this LR will be lost, a relatively small amount, and the overall magnitude of change is considered small.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR 10 Open Space / Recreational Area													
KLR-10.1	Hong Kong Golf Club	Outside RODP boundary	19.40	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The golf club is located outside the RODP boundary and therefore the Project will have no impact on it.											
KLR-10.2	Sheung Shui Community Sports	DP4: KTN NDA Road D1 to D5; A3-1, A3-2 both (E); A3-3 (PRH); E1-1(O); E1-3 (G); E1-2, E1-4 both (E); E1-5 (G-REC); H1-1(GB)	10.15	10.15 (70%)	Large	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Large	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> A very small area of this LR falls within the site H1-1 which is designated as 'green belt' and this land will not be impacted by the Project. Approximately 3 ha of this LR will be impacted by sites designated for similar land use, such as a Standard Swimming Pool & Sports Centre at E1-5 and land designated as 'open space' at E1-1. At these sites impacts due to demolition of existing structures and site formation may be large during construction, but at operation the impact will reduce to small as the land use will be highly compatible. About 4 ha of this LR is on land designated for other less compatible land uses e.g. Primary Schools at A3-1 and E1-2, district HQ, divisional Police Station and Married Quarters and Re-provisioning of Fan Garden at E1-3, and Secondary Schools at A3-2 and E1-4. During construction, demolition of existing structures and site formation will adversely impact this LR and at operation land use will have changed to less compatible uses. Overall the Project affects most of this LR and at construction the magnitude of change is considered large. At operation although much of the land use will have changed, some of this is compatible and the overall magnitude of change is considered intermediate.											
KLR-10.3	Lo Wu Saddle Club	D1-9 (V), G1-6, G1-7 both (G)	1.96	1.96 (0%)	n/a	Good	Good	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> Lo Wu Saddle Club is on land designated to remain the same and will not be affected by the Project.											
KLR 11 Urban Development Area													
KLR-11.1	Lo Wu Correctional Institution	C2-4(AGR), G1-8(G)	5.83	5.76 (0%)	n/a	Good	Good	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The government's Lo Wu Correctional Institution is on land designated to remain the same (G1-8) and will not be affected by the Project. An existing road associated with the Lo Wu correctional centre runs through Site C2-4 and equally negligible change to the road is expected. Overall the Project will cause negligible change to this LR.											
KLR-11.2	Existing formation site for proposed Kwu Tung MTRC Station	DP6 Proposed Railway Station and Associated Facilities (under separate study) A1-5 (CDA); A1-6, A2-5 both (R1c); A1-10 (O); A1-11, A1-12 both (OU-RAF); A2-4(HOS); A2-7(PRH)	4.14	4.14 (<5%)	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> This LR is on land mainly designated for the same land use (open space at A1-10 and railway associated facilities at A1-11 and A1-12) but a very small section falls on land designated for residential use with some commercial use at A1-5, A1-6 and A2-5. Due to impacts during site formation, the overall magnitude of change must be considered to be small rather than negligible.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR 12 Rural Development Area													
KLR-12.1	Ho Sheung Heung Rural Development Area	C2-2 (AGR), C2-3 (IC); D1-1 and D1-4 both (O), D1-2 (OU-RAF), D1-3 (OU-SPS), D1-5(R4), D1-7 (R2), D1-9 (V)	18.80	18.80 (10%)	Medium	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> Although this LR is affected by land designated for various land uses, most of it appears to be in keeping with the present land use; most of the area lies within D1-9 which is the Ho Sheung Heung village area and designated for village type development and the current basketball court at C2-3 will remain; 'open space' at D1-1 and D1-4, and low density residential use at D1-5 are also compatible land uses. The land use will change for the small area that falls within site D1-7 which is designated for denser residential development and D1-2 designated for 'railway associated facilities'. During construction, site formation will only be required at D1-7, D1-2, D1-1, D1-4 and D1-5, but the areas of these sites affecting this LR are relatively small and the magnitude of change at construction and operation is considered intermediate											
KLR-12.2	Rural Development Area in Long Valley, Yin Kong, Tsung Pak Long and Hakka Wai	C1-2 (A); C1-4 (V); C1-5 (GB); C1-6 (AGR); C1-9 (OU)	23.51	15.59 (15%)	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> Much of this LR is outside the RODP boundary and for that area inside, most of it falls on sites with designations for the same land use e.g. 'village type development' at C1-4 and 'agriculture' at C1-6. A small part is within site C1-9 designated as 'nature park' and land within this site will not be adversely impacted. A very small area borders the site designated at 'green belt' (C1-5) and this will not be adversely affected by the Project either. Site formation works are unlikely to be required at the sites affecting this LR and overall the magnitude of change is considered to be small since most land use will remain the same.											
KLR-12.3	Rural Development Area in Ngam Pin	Outside RODP boundary	4.07	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This rural development area is located outside the RODP boundary and therefore the Project will have no impact on it.											
KLR-12.4	Rural Development Area to the East of MTRC East Railway Line	Outside RODP boundary	4.99	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This rural development area is located outside the RODP boundary and therefore the Project will have no impact on it.											
KLR-12.5	Rural Development Area to the North of Hong Kong Golf Club	Outside RODP boundary	3.45	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This rural development area is located outside the RODP boundary and therefore the Project will have no impact on it.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR-12.6	Kam Tsin Rural Development Area	Outside RODP boundary	39.49	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This rural development area is located outside the RODP boundary and therefore the Project will have no impact on it.											
KLR-12.7	Kwu Tung Fresh Water Service Reservoir	Outside RODP boundary	1.71	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This rural development area is located outside the RODP boundary and therefore the Project will have no impact on it.											
KLR-12.8	Rural Development Area of Europa Garden and Valais	Outside RODP boundary	27.13	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This rural development area is located outside the RODP boundary and therefore the Project will have no impact on it.											
KLR-12.9	Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang	DP1: San Tin Highway and Fanling Highway; DP2: Castle Peak Road Division;DP4 Roads D1 to D5; A1-4(R1c), A1-5(CDA), A1-9(R2), A2-2(PRH), A2-3(O), A2-4(R1c), A2-5(R1c), A1-10, A2-6, E1-7 all (O), A2-7(PRH), A2-12(E), A2-13(E), A3-3(PRH), A3-4(E), A3-6(R2), A3-7(RR4); B2-3 (A), B2-6, B2-7 both (E), B2-8(G), B2-9 (O), B2-10 (CDA); E1-5 (G-REC), E1-6 (G), E1-8 (GB), E1-9 (OU-RCP); F1-7(O); G1-2(OU-FR); H1-1(GB)	46.15	44.45 (80%)	Large	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> Just under 2 ha of this LR falls outside the RODP boundary and will not be affected, similarly to the small portion that falls on sites designated as 'green belt' (E1-8, H1-1) and the very small portion that falls in G1-2 designated as 'Lo Wu Firing Range'. However most of this LR will undergo some change from a rural development area to a more urban area with increased facilities such as a swimming pool complex (E1-5), fire station cum ambulance depot (E1-6), nursery class & kindergartens (within A1-5, A2-2, A2-4, A2-7, A3-3), primary and secondary schools (within B2-6, B2-7, A2-12, A2-13, A3-4) as well as more residential development e.g. at A1-4, A1-5, A1-9, A2-4, A2-5, A3-6, A3-7 and some public rental housing e.g. at A2-2, A2-7, A3-3. During construction, site formation works at all these sites will mean the magnitude of change is large and during operation the land use type will have changed for most of this LR, so overall the magnitude of change is also large.											
KLR-12.10	Lo Wu Rifle Range	G1-1,G1-2 (both OU-FR), F1-6 (GB)	4.26	4.16 (0%)	n/a	Good	Good	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The Lo Wu Rifle Range is on land designated to remain as a firing range (G1-1, G1-2) and 'green belt' (F1-6) therefore will not be affected by the Project.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR-12.11	Rural Development Area in Ma Tso Lung	F1-3 (OU-R&D); F1-5 (GB)	14.53	1.63 (90%)	Small	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> Only a small area of this LR falls with the RODP boundary and this area falls mainly on site F1-3 designated for Research and Development buildings in support of Lok Ma Chau Loop Development. This will change the land use for this small area but the compatibility is considered fair. In addition to this area being small some of this LR in the NDA boundary also falls on an area designated as Green Belt (F1-5) and the overall magnitude of change to this LR is small.											
KLR-12.12	Fanling Lodge	Outside RODP boundary	0.71	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> Fanling Lodge is located outside the RODP boundary and therefore the Project will have no impact on it.											
KLR 13 Industrial / Open Storage													
KLR-13.1	Sheung Shui Industrial Area	Outside RODP boundary	37.08	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The industrial area is located outside the RODP boundary and therefore the Project will have no impact on it.											
KLR-13.2	Industrial / Open Storage Area in Yin Kong	DP1: San Tin Highway and Fanling Highway; DP2: Castle Peak Road Division; DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement B3-12 (OU-C,R&D); B3-13, B3-14 both (A), B3-15 (OU-PFS); C1-1 (O); C1-9 (OU-NP); C1-11 (IC)	5.61	5.61 (90%)	Medium	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Large (partly beneficial)	Intermediate (partly beneficial)
		<u>Description of Key Impacts during Construction and Operation</u> All this LR is located on sites designated for different land use such as amenities (B3-13, B3-14), Kwu Tung Vegetation Marketing and Co-operative Society (C1-11), commercial, research & development buildings (B3-12) and a petrol filling station (B3-15) and during construction, site formation works will be required with some demolition of existing structures so the magnitude of change here is considered large but partly beneficial as the land use will improve. In addition no site formation or significant change is expected during construction at C1-1 and C1-9 which are designated for open space and the nature park. At operation the land uses are fairly compatible with the current land use and enhance it in places so that overall the magnitude of change is considered intermediate but partly beneficial											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR-13.3	Industrial / Open Storage in Shek Tsai Leng , Tong Kok and Fung Kong	A1-5 (CDA); A1-6, A1-8 (R1c); A1-7, A1-10, A2-8, A2-14 all (O); A1-9, A2-9 both (R2), A2-2, A2-7, A3-3 all (PRH); A2-10, A3-5 both (A); A2-13, A3-1, A3-2 all (E); A3-3(PRH); B2-9, B2-13, B3-1, B3-3 all (O); B2-10 (CDA), B2-11 (A), B2-12, B3-2, B3-5 all (OU); D1-6, D1-10, D1-15 all (A); D1-7, D1-11 both (R2); D1-12 and D1-13 both (G-REC), D1-14 (G); E1-7(O); E1-8, G1-3 both (GB)	56.18	56.18 (100%)	Large	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Large (partly beneficial)	Large (partly beneficial)
		<p><u>Description of Key Impacts during Construction and Operation</u></p> <p>Some of this LR falls on sites designated as 'green belt' (E1-8, G1-3) and will not be affected. However most of this LR will undergo some change from an industrial/open storage area to being part of an urban area with many facilities such as nursery class & kindergartens (within A1-5, A1-6, A1-8, A2-7, A3-3), primary and secondary schools (within A2-13, A3-1, A3-2) as well as more residential developments e.g. at A1-5, A1-6, A1-8, A1-9, A2-9, D1-7, D1-11, potential activities centre (D1-12 and D1-13), some public rental housing e.g. at A2-2, A2-7, A3-3 and amenities e.g. at A2-10, B2-11, D1-6, D1-10, D1-15 etc. Therefore during construction, site formation works will be required with some demolition of existing structures and the magnitude of change is considered large, but partly beneficial as the land use will improve. At operation, the land use type will have changed for most of this LR, but will have been enhanced and overall the magnitude of change will remain large but partly beneficial.</p>											
KLR-13.4	Industrial / Open Storage in Pak Shek Au, Chau Tau and Foothill of Ki Lun Shan	DP1: San Tin Highway and Fanling Highway; DP2: Castle Peak Road Division; DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement; DP4 Roads D1 and D4; A1-1(A), A1-2(PRH-LR), A1-10(O), B1-1(A), B1-3(GB), B1-4(A), B1-5(OU), B1-7(OU-DCS), B1-8(A), B1-9(A), B1-10(A), B2-1(A), B2-2(G)	30.99	9.02 (100%)	Large	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Large (partly beneficial)	Intermediate (partly beneficial)
		<p><u>Description of Key Impacts during Construction and Operation</u></p> <p>Most of this industrial/open storage area falls outside the RODP boundary and will not be affected by the Project. The area within the RODP will be affected mainly by sites designated for amenities (A1-1, B1-1, B1-4, B1-8, B1-9, B1-10, B2-1) and roads,, as well as railway associated facilities (B1-5) and plant for District Cooling System (B1-7). Some of the LR also falls on part of a site designated for residential developments (A1-2). During construction, site formation works will be required with some demolition of existing structures and the magnitude of change is considered large, but partly beneficial as the land use will improve. At operation, although the Project will affect just over 9 ha of this LR, the land use will be fairly compatible with existing, partially enhancing it and the magnitude of change is considered to be intermediate but also partly beneficial.</p>											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approx. Area of LR in Study Area (ha)	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR 14 Major Transportation Corridor													
KLR-14.1	Fanling Highway and nearby associated roads	DP1 San Tin Highway and Fanling Highway; DP2: Castle Peak Road Division; DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement, B1-2, B1-6, B1-8, B3-10, B3-11 all (A); B1-3(GB), B1-7(OU-DCS); C1-2(A)	Length of LR in Study Area: 3880 m	Length of LR within NDA: 2850 m Length of LR affected 2850 m (100%)	Large	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> Parts of Fanling Highway affected by the Project are all designated for 'amenity' use and roads and therefore the land use will not change. A sizeable area is impacted and some of the roadside planting will be cleared for the road widening work and noise barriers. Additionally the associated drainage channels will have to be modified through diversion to accommodate the new roadworks, but given the new roads will also need similar associated drainage channel and the land use is the same the overall compatibility is good. Largely due to the quantity of roadside planting, the magnitude of change is considered intermediate during construction and operation.											
KLR-14.2	MTRC East Rail (to/from Lo Wu)	Outside RODP boundary	Length of LR in Study Area: 2070 m	Length within the NDA: 0 m	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This LR is located outside the RODP boundary and therefore the Project will have no impact on it.											

*Code	Land Use Type
A	Amenity
AGR	Agriculture
C	Commercial
CA	Conservation Area
CDA	Comprehensive Development Area
E	Education
G	Government
G-REC	Government Recreation
GB	Green Belt
HOS	Home Ownership Scheme
IC	Institution / Community
O	Open Space
OU-C,R&D	Other Specified Uses - Commercial, Research & Development
OU-DCS	Other Specified Uses - District Cooling System
OU-FR	Other Specified Uses - Firing Range
OU-NP	Other Specified Uses – Nature Park
OU-PFS	Other Specified Uses - Petrol Filling Station
OU-POFEFTS	Other Specified Uses - Parking and Operation Facilities for Environmentally Friendly Transport System
OU-R&D	Other Specified Uses - Research & Development
OU-RAF	Other Specified Uses - Railway Associated Facilities
OU-SPS	Other Specified Uses - Sewage Pumping Station
OU-STW	Other Specified Uses - Sewage Treatment Works
OU-VC	Other Specified Uses – Visitor Centre
PRH	Public Rental Housing
PRH-LR	Public Rental Housing – Local Rehousing
R1	Residential Zone 1 - highest density
R1c	Residential Zone 1 - highest density - with commercial
R2	Residential Zone 2 - medium density
R2c	Residential Zone 2 - medium density - with commercial
R3	Residential Zone 3 - low density
R4	Residential Zone 4 – very low density
RR4	Rural Residential (lower density & building height than R) lowest density
V	Village Type Development

Table 12.8.2 - Magnitude of change to KTN NDA LCAs

LCA Code	Name	Site No. (Land Use Type*) Impacting LCA	Area of LCA (ha) in Study Area	Area of LCA affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLCA-1	Natural Hillside Landscape	Principally 'B sites' for Commercial Research & Development Area/ Community Facilities Area but mainly B1-3 (GB); 'D sites' for Tranquil Rural Residential Area but mainly D1-8 (GB); 'E sites' for Recreational Area but mainly E1-8 (GB); 'G sites' for Government Facility Area and 'H sites' for Hilly Terrain Area. A very small peripheral area is affected by 'A sites' for Town Centre & North Residential Area	307.43	90.66 (<5%)	Small	Poor	Poor	Temporary Medium Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> Most of this LCA falls outside the RODP boundary but for that falling within, the majority lies on sites designated as green belt (B1-3, D1-8, E1-8, G1-3, H1-1) and will not be affected by the Project. Very small areas are affected by sites designated for other uses which are not compatible with the current character, such as government use (D1-12, D1-13, E1-2), rural residential development (A3-7), school buildings (A3-4), amenities (B1-1), railway associated facilities (B1-5). Some sites designated for water service reservoirs (G1-4, G1-5) will involve cut/ filled slopes which increase the magnitude of change for this LCA. Since the majority of this LCA will remain unaffected by the Project, the magnitude of change during both construction and operation phase is intermediate.											
KLCA-2	Rural and Urban Peripheral Village Landscape	This LCA is affected by all sites: 'A sites' for Town Centre & North Residential Area; 'B sites' for Commercial Research & Development Area/ Community Facilities Area; 'C sites' for Long Valley Ecological Area; 'D sites' for Tranquil Rural Residential Area; 'E sites' for Recreational Area; 'F sites' reserved for Research and Development; 'G sites' for Government Facility Area and 'H sites' for Hilly Terrain Area.	404.48	194.38 (85%)	Large	Poor	Poor	Temporary Medium Term	Permanent	Reversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> While a sizeable area of this LCA falls outside the RODP boundary, a large area lies within it and will be affected by sites designated for land use that is not compatible with the current LCA e.g. amenities (A1-1, A2-1, B1-1, B1-4, B1-6, B1-8, B1-9, B2-1, B2-3, C1-2, D1-6, G1-9), railway associated facilities (B1-5), sewerage pumping station (F1-2), refuse collection point (B2-2, E1-9), fire station cum ambulance depot (E1-6), district police station (E1-3), recreational activity buildings including swimming pool complex, sports/leisure centre and potential activities centre (E1-5, F1-1, D1-13, D1-12), schools (within A2-11, A2-12, A2-13, A3-4, B2-5, B2-6, B2-7, E1-2, E1-4), public rental housing (A1-2, A2-2, A2-7, A3-3), high density residential developments, sometime with commercial uses (A1-4, A1-9, A2-4, A2-5, A2-9, A3-6, D1-7, D1-11), public transport interchange (within A1-5), hospital, polyclinic/specialist clinic (within B2-2), social and welfare facilities (B2-8), comprehensive development area (A1-5), research and development in support of the Lok Ma Chau Loop development (F1-3,) and F1-4 which is a disused school potentially designated for an Eco-tourism education centre and holiday camping or other recreational uses. There are areas that fall on sites designated for land use that is compatible with the current LCA, including on G1-1 and G1-2 (Lo Wu Firing Range), F1-8 (for Agriculture), D1-9 (Ho Sheung Heung, Hau Ku Shek Ancestral Hall, Hung Shing Temple & Pai Fung Temple and Sin Wai Nunnery in V), E1-7 (green spine, open space and Fung Kong Shan, cycling park), G1-6, G1-7 (Lo Wu Saddle Club), C1-6, C2-2, C2-4, C2-5 (Agriculture), C1-9 (Nature Park) as well as all the sites designated for green belt including B1-3, C1-5, D1-8, E1-8, F1-5, F1-6, G1-3, H1-1. Overall although much of this LCA will not be affected by the Project, a large area (over 100 ha) will be adversely impacted and undergo land use change and the overall magnitude of change is large.											
KLCA-3	Urban Development Landscape	G1-8(G)	5.98	5.84 (0%)	Small	Good	Good	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> Lo Wu Correctional Institution has been classified as 'urban development' and is the small area of this LCA within the RODP boundary. This facility is proposed to remain the same throughout the project and therefore the impact of the Project on this LCA is considered to be negligible.											

LCA Code	Name	Site No. (Land Use Type*) Impacting LCA	Area of LCA (ha) in Study Area	Area of LCA affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLCA-4	Industrial Landscape	This LCA is affected by: 'A sites' for Town Centre & North Residential Area; 'B sites' for Commercial Research & Development Area/ Community Facilities Area; 'D sites' for Tranquil Rural Residential Area; 'E sites' for Recreational Area and slightly by 'C sites' for Long Valley Ecological Area	117.76	61.53 (100%)	Large	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Intermediate (partly beneficial)	Small (beneficial)
		<u>Description of Key Impacts during Construction and Operation</u> The majority of this LCA falls within the RODP boundary, and will be affected by sites designated for land use that is fairly compatible with the current LCA e.g. amenities (A2-10, A3-5, B2-11, B3-13, B3-14, D1-6, D1-10, D1-15), public transport interchange (within A1-5), railway associated facilities (A1-11, A1-12), schools (within A1-5, A1-6, A1-8, A2-7, A2-11, A2-12, A2-13, A3-1, A3-2, A3-3), public rental housing (A2-2, A2-7, A3-3), comprehensive development area (A1-5, B2-10), recreational activity facilities including a standard swimming pool, sports centre (E1-5) and potential activities centre (D1-12, D1-13), residential development areas (A1-6, A1-8, A1-9, A2-4, A2-5, A2-9, A3-6, D1-7, D1-11), commercial, research & development (B2-12, B3-2, B3-5, B3-12), and government reserve (D1-14). Overall a large area will be impacted by fairly compatible land uses and the magnitude of change is considered to be intermediate but partly beneficial during construction and small beneficial overall by operation.											
KLCA-5	Lowland Agricultural Landscape	All of 'A sites' for own Centre & North Residential Area; 'B sites' for Commercial Research & Development Area/ Community Facilities Area; 'C sites' for Long Valley Ecological Area; 'D sites' for Tranquil Rural Residential Area; 'F sites' reserved for Research and Development and 'H sites' for Hilly Terrain Area	85.93	74.51 (10%)	Medium	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> While a large area of this LCA falls within the RODP boundary, a significant portion of this (over 65 ha of the 74.51 ha total within) is located on sites designated for the proposed Long Valley Nature Park (C1-9), agriculture around Long Valley (C1-6) and green belt (C1-5 in Long Valley; H1-1) and will remain unaffected or not adversely affected by the Project. Under 7.4 ha is affected by sites designated for uses incompatible with this LCA such as residential developments (A1-9, A2-9, D1-7), rural residential (D1-5), sewage pumping station (D1-3), railway associated facilities (D1-2), sport ground / sport complex (F1-1), commercial, research and development including a post office, visitor centre of Long Valley Nature Park (B3-2, B3-5, B3-8, B3-12, B3-16) and Research and Development buildings in support the Lok Ma Chau Development (F1-3). Overall the magnitude of change is considered to be intermediate.											
KLCA-6	Major Transportation Corridor Landscape	Principally 'B sites' for Commercial Research & Development Area/ Community Facilities Area	Length of LCA in Study Area: 6100 m	Length within NDA: 2860 m Length affected 2860 m (100%)	Medium	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> All of the LCA affected by the Project falls on land designated for 'amenities', roads and their associated structures. Almost 3km of this transportation corridor is affected by the Project and some of the roadside planting will be cleared for the road modification work so some of the green aspect of the LCA will be lost. However since the land use at operation is the same and the Fanling Highway will continue to dominate the character of the area, the overall compatibility is good. The magnitude of change is therefore considered small at construction and operation.											
KLCA-7	Major Water Course Corridor Landscape	Both 'B sites' for Commercial Research & Development Area/ Community Facilities Area; and 'C sites' for Long Valley Ecological Area	Length of LCA in Study Area: 5080 m	Length within NDA: 2860 m Length affected: 250 m (10%)	Small	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> The majority of this LCA within the RODP will be affected by sites designated for land use that is compatible with this LCA e.g. 'open space' which covers most of the river banks (B3-3, B3-4, B3-9, C1-7, C1-8, C2-1) and the proposed Long Valley Nature Park (C1-9). Small areas of land associated with or adjacent to the river banks will be affected by sites with incompatible designations e.g. amenities (B3-10, C1-10) and commercial research and development (B3-12), roads and a footbridge but no actual buildings structure are currently proposed to fall on this LCA and the water course will not change trajectory. During construction, site formation at B3-10, C1-10 and B3-12 may partially impact this LCA and cause small magnitude of change and at operation the magnitude of change is also considered small.											

*Code	Land Use Type
A	Amenity
*Code	Land Use Type
A	Amenity
AGR	Agriculture
C	Commercial
CA	Conservation Area
CDA	Comprehensive Development Area
E	Education
G	Government
G-REC	Government Recreation
GB	Green Belt
HOS	Home Ownership Scheme
IC	Institution / Community
O	Open Space
OU-C,R&D	Other Specified Uses - Commercial, Research & Development
OU-DCS	Other Specified Uses - District Cooling System
OU-FR	Other Specified Uses - Firing Range
OU-NP	Other Specified Uses – Nature Park
OU-PFS	Other Specified Uses - Petrol Filling Station
OU-POFEFTS	Other Specified Uses - Parking & Operation Facilities for Environmental Friendly Transport System
OU-R&D	Other Specified Uses - Research & Development
OU-RAF	Other Specified Uses - Railway Associated Facilities
OU-SPS	Other Specified Uses - Sewage Pumping Station
OU-STW	Other Specified Uses - Sewage Treatment Works
OU-VC	Other Specified Uses – Visitor Centre
PRH	Public Rental Housing
PRH-LR	Public Rental Housing – Local Rehousing
R1	Residential Zone 1 - highest density
R1c	Residential Zone 1 - highest density - with commercial
R2	Residential Zone 2 - medium density
R2c	Residential Zone 2 - medium density - with commercial
R3	Residential Zone 3 - low density
R4	Residential Zone 4 – very low density
RR4	Rural Residential (lower density & building height than R) lowest density
V	Village Type Development

12.8.1.2 Fanling North NDA

The magnitude of change to FLN NDA LRs and LCAs are detailed in **Tables 12.8.3 and 12.8.4** respectively.

Figures 12.12.0-12.12.4 and 12.14.0-12.14.4 help to illustrate these landscape impacts on LRs and LCAs respectively. **Figure 12.12.5a-d** also illustrates the cut/fill contour plan for FLN NDA.

Noting that almost no LR or LCAs had 'local, regional, national or global importance' nor 'statutory or regulatory limitations / requirements relating to the landscape resources / character areas', details of these parameters are only given in the descriptive text, where necessary.

Table 12.8.3 - Magnitude of change to FLN NDA LRs

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approximate Area of LR (ha) in Study Area	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR 1 Channelized Water Course													
FLR -1.1	Ng Tung River (Fanling District)	DP7 Utilization of Treated Sewage Effluent and DP11 Further Expansion of Shek Wu Hui Sewage Treatment Works, both at A2-3; DP10 Fanling Bypass Eastern Section where it crosses the Ng Tung River; A1-4, B1-1, B1-2, B1-5, B1-10 B2-1, B2-8, B2-10, B3-1, B3-11, C1-3, C2-1, C2-4, C2-10, C2-8, D1-2, D1-3, D2-1, D2-7, D2-10 all (O); C2-7, C2-9 both (E); A1-1, A1-2, A1-8 all (G); A1-6, B1-4 both (OU-SPS); A2-3(OU-STW); A1-5, A1-10, A2-1, A2-2, A2-4, C1-1, C1-2, D1-1 all (A)	Length of LR in Study Area: 6600 m	Length of LR within NDA: 5000 m Length of LR affected: 290 m (5%)	Small	Fair	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> Ng Tung River flows through the length of this NDA and while most of the main channel will not be affected, there are sites overlapping with this LR along its grasscrete banks or adjacent to the banks. All of these sites except one or two, however, have similar land use to the current land use, i.e. open space (A1-4, B1-1, B1-2, B1-5, B1-10, B2-1, B2-8, B2-10, B3-1, B3-11, C1-3, C2-1, C2-4, C2-10, D1-2, D1-3, D2-1, D2-7). The open space at C2-8 where a small nullah of this river lies, is designated a Town Park with facilities for e.g. football, volleyball, tennis etc. Unless mitigated, the nullah here (~600 m) may be affected by the Project. The periphery of sites A1-1, A1-2 and A1-8 in the west of the NDA, which are designated for government use (existing CLP substation and existing WSD raw water pumping station; Police Driving and Traffic Complex) may impact this LR, but since the river channel is at the edges of the sites, the areas affected will be very small, (with the exception of A1-8 which covers a short (~250 m) tributary to the river). Similarly the impact of the Sewage Pumping Stations at A1-6 and B1-4, Primary School at C2-7, Secondary School at C2-9 and the new road complex will only affect a small area of this LR and this will again mainly be at construction stage during site formation. Sites A2-1, A2-2 designated for 'amenities' may affect a slightly larger area (<1.4 ha) as well as routes along the river also designated as Amenities (A1-5, A2-4, A1-10, C1-1, C1-2, D1-1 amounting to <1.4ha) and the further expansion of the Sewage Treatment Works at A2-3 may also have an impact on a larger area of the banks and adjacent. Impacts at these sites will be during site formation initially but at operation land use will have changed only for a small area adjacent to the river itself. Overall although a significant area of this LR lies within the RODP, only a small length of this will potentially be affected by the Project. Since the main river channel will hardly be affected, the magnitude of change is small at construction and operation.											
FLR -1.2	Shek Sheung River	DP7 Utilization of Treated Sewage Effluent and DP11 Further Expansion of Shek Wu Hui Sewage Treatment Works, both at A2-3	Length of LR in Study Area: 2400 m	Length of LR within NDA: 380 m Length of LR affected: 150 m (40%)	Small	Poor	Poor	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> A small area of the Shek Sheung River bank in the west of the NDA may be affected by site A2-3 designated to contain an expansion of the existing Sewage Treatment Works and B3-4 and B3-5 for school. Any impacts would initially be at site formation but given the small area affected the magnitude of change would only be small. At operation, although this is not a compatible land use with the current LR, the area affected is very small and overall the magnitude of change is small also.											
FLR -1.3	Sheung Yue River	Outside RODP boundary	Length of LR in Study Area: 700 m	Length within the NDA: 0 m	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This section of the river is located outside the RODP boundary and therefore the Project will have no impact on it.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approximate Area of LR (ha) in Study Area	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR -1.4	Ma Wat River	DP10 Fanling Bypass Eastern Section where it runs adjacent to the River; D1-4, D1-5 both (O), D1-6(G and part of DP12 Reprovision of Wholesale Market'), D2-17(A)	Length of LR in Study Area: 3600 m	Length of LR within NDA: 960 m Length of LR affected: approx. 250 m (25%)	Medium	Poor	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Large	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> Ma Wat River flows along the north eastern boundary of the RODP and two sites that affect it, D1-4 and D1-5, are designated for open space. Part of D1-6 however falls on this LR and this existing 'North District Temporary Wholesale Market for Agricultural Produce' is part of DP12 to undergo re-provisioning. The very small area of D1-6 that affects this LR (<0.3 ha) may mean some of the vegetation in the vicinity of the river banks would be cleared during re-provisioning of the market but at operation the main market building is not on this LR. However for the construction of the Fanling Bypass Eastern Section (DP10) most of this stretch of Ma Wat River will have to be diverted and the impacts of this are fully assessed in the DP Package 12D . Overall this LR will mainly be affected by the Fanling Bypass Eastern Section and the magnitude of change is considered to be large at construction when the diversion takes place. The river is already channelized however and at operation will flow through a similar channelized section, so the magnitude of change is considered to be intermediate.											
FLR -1.5	Water Course through Ma Shi Po Agricultural Land	D2-2(HOS), D2-3(O), D2-4(R2), D3-5(O), D3-6(R1c), D3-8(PRH), D3-9(A)	Length of LR in Study Area: 500 m	Length of LR within NDA: 500 m Length of LR affected: approx. 500 m (100 %)	Large	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> The whole length of this watercourse falls within the NDA in areas with incompatible use such as residential use as well as roads (part of the local distributor road L1). The watercourse will be lost during site formation, even in land designated as 'open space' as this is open space between new buildings and not passive open space and hence still incompatible. Overall the magnitude of change is large during construction and operation.											
FLR 2 Water Course													
FLR -2.1	Natural Stream in Tin Ping Shan Agricultural Land	B3-2, B3-3, B3-7 all either PRH or R2, B3-4(E)	Length of LR in Study Area: 400 m	Length of LR within NDA: 400 m Length of LR affected: approx. 400 m (100%)	Large	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> This stream in the western area of FLN NDA amongst the agricultural land at Tin Ping Shan (Sacred Hill), will be impacted by three sites all designated for high to medium density residential use. A distributor road and the access road to these sites will also affect the stream and it will be filled during site formation and replaced by a water drainage system. Overall the magnitude of change during construction and operation is large.											
FLR -2.2	Natural Stream at Cham Shan	Outside RODP boundary	Length of LR in Study Area: 580 m	Length within the NDA: 0 m	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This stream is located outside the RODP boundary and therefore the Project will have no impact on them.											
FLR -2.3	Natural Streams at Lung Shan	Outside RODP boundary	Length of LR in Study Area: 1150 m	Length within the NDA: 0 m	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> These streams are located outside the RODP boundary and therefore the Project will have no impact on them.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approximate Area of LR (ha) in Study Area	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR -2.4	Natural Streams at Siu Hang San Tsuen	DP10 Fanling Bypass Eastern Section; D1-3 (O)	Length of LR in Study Area: 1500 m	Length of LR within NDA: 160 m Length of LR affected: approx.100 m (60%)	Medium	Poor	Fair	Temporary Short Term	Permanent	Reversible	Reversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> The stream at the lowland area of Wa Shan will not be affected as it falls outside the RODP boundary. Only the downstream area of the stream at Siu Hang San Tsuen falls within the footprint of RODP and will be affected by the site designated for the Fanling Bypass Eastern Section but it is unlikely to be affected by the development which the site is designated as open space (D1-3). A 10m wide vegetated buffer in the open space will be provided to the stream. Fanling Bypass will be an elevated viaduct over the section close to the stream and should avoid directly impacting it and causing any loss of the stream. It is expected that the intensity of sunlight that can reach the stream area will be reduce by the viaduct and as a result the growing conditions of riparian plants and the landscape quality provided by such riparian plants, will be reduced. Overall, the magnitude of change during construction and operation is small.											
FLR 3 Water Pond													
FLR - 3.1	Ho Sheung Heung and Long Valley Water Ponds	Outside RODP boundary	4.54	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> These ponds are located outside the FLN RODP boundary and therefore are not affected by the FLN NDA.											
FLR - 3.2	Water Ponds within the Closed Area	Outside RODP boundary	4.98	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> These ponds are located outside the RODP boundary and therefore the Project will have no impact on them.											
FLR -3.3	Fu Tei Au Water Ponds	A1-3 (AGR); A1-4 (O); A1-8 (G)	2.44	2.44 (5%)	Large	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> Most of these ponds will be affected by a site designated for Agricultural land (A1-3) and they will not be adversely affected by the Project. Part of one pond falls on a site designated for open space (A1-4) which is also scheduled to have a 'Man Ming Temple' on it but currently the temple does not fall on the pond area and therefore the pond will be retained. One very small pond falls within a site for the Police Driving and Traffic Training Complex (A1-8) and this will be lost during site formation. Since the majority of these ponds in the NDA will remain unchanged by the Project, the magnitude of change at construction and operation is small. .											
FLR -3.4	Water Ponds in Eastern Rural Area	Outside RODP boundary	0.33	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> These ponds are located outside the RODP boundary and therefore the Project will have no impact on them.											
FLR -3.5	Wai Loi Tsuen Water Pond	Outside RODP boundary	0.37	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> These ponds are located outside the RODP boundary and therefore the Project will have no impact on them.											
FLR 4 Marsh													
FLR -4.1	Marshes in Long Valley and near Tsung Yeun	Outside RODP boundary	1.67	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> These marshes are located outside the RODP boundary and therefore the Project will have no impact on them.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approximate Area of LR (ha) in Study Area	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR -4.2	Mitigation Wetland	DP9 Fanling Bypass Western Section; A1-7(CA), A1-11(G); B1-2, B1-5, B2-8, B2-9, B2-10 all (O); B1-6(A); B3-8(O for cycle parking area); B3-10 (E); B1-7, B2-11, B3-9 all R2 or PRH, C2-9(E)	5.70	5.27 (45%)	Large	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> There are six main mitigation wetland areas along Ng Tung River within the RODP. One of them of approximately 1 ha lies within site A1-7 designated as Conservation Area and possible site for an egret relocation, and another similar sized area of this LR lies wholly within B1-2 which is designated as open space. It is unlikely that the wetland in these sites will be affected by the Project. Part of the remaining four wetland areas are affected both by sites designated as open space which is unlikely to affect the LR (B1-2, B1-5, B2-8, B2-9, B2-10), and by sites designated for incompatible uses such as weapons training division, residential, secondary school, amenities, open space for cycle parking area and education facilities (A1-11, B1-7, B2-11, B3-9, B3-10, B1-6, B3-8, C2-9). Part of this LR will also be affected by the Fanling Bypass Western Section which is at grade at the relevant locations of overlap. For the incompatible uses, the wetland in these areas will be irreversibly lost during site formation, largely due to filling. Given the worst case scenario is that over half of this LR will remain unaffected, however, the magnitude of change is large at construction and operation.											
FLR 5 Plantation													
FLR -5.1	Plantation in the Vicinity of Wai Loi Tsuen	Outside RODP boundary	3.87	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This plantation is located outside the RODP boundary and therefore the Project will have no impact on it.											
FLR -5.2	Ha Pak Tsuen Plantation	Outside RODP boundary	1.10	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This plantation is located outside the RODP boundary and therefore the Project will have no impact on it.											
FLR -5.3	Plantation in the Vicinity of On Kwok Villa and Noble Hill	C2-8 (O)	3.35	0.27 (50%)	Small	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> Only a very small area of this LR falls within the RODP and of this, roughly half will be affected by a site designated for open space (C2-8) and a distribution road. Since the open space is intended to be a Town Park with facilities for e.g. football, volleyball, tennis etc. the worst case scenario is that the trees in this area will be cleared and lost during construction. Overall given the very small area adversely affected, the magnitude of change is considered to be small at construction and operation.											
FLR 6 Hillside Woodland													
FLR -6.1	Sheung Shui Water Treatment Works Hillside Woodland	A1-3, A1-9 both (AGR);	4.82	0.64 (60%)	Small	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> A small area of this LR is located within the RODP, affected by sites A1-3, and A1-9 which are designated as Agricultural land which is compatible with this LR. Since the majority of this LR in the Study Area will remain unaffected, the overall magnitude of change is small.											
FLR -6.2	Cham Shan and Wa Shan Hillside Woodland	DP10 Fanling Bypass Eastern Section; B1-7 (R2), B1-8 (R4), B1-9 (R3);	60.24	2.87 (>95%)	Medium	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> Although a relatively small area of this LR falls within the RODP, most of it lies on sites designated for incompatible land use such as low density residential zones (B1-9), medium residential zone (B1-7) or rural residential (B1-8). Trees are likely to be removed during site clearance and formation, having a large impact and at operation land use will have permanently changed. A small area of this LR further to the south east of Ng Tung River will be adversely affected by the Fanling Bypass Eastern Section. Overall, a relatively small area is affected, but in case a large number of trees are adversely affected, the magnitude of change is considered large.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approximate Area of LR (ha) in Study Area	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR -6.3	Ma Wat Wai Hillside Woodland	Outside RODP boundary	3.83	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This woodland is located outside the RODP boundary and therefore the Project will have no impact on it.											
FLR -6.4	Hillside Woodland at Lung Shan and Wa Mei Shan	D4-1 (G)	23.28	0.04 (100%)	Small	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> A very small area of this LR is located within the RODP, in site D4-1 which is the proposed area for the Fanling North Flushing Water Service Reservoir. The trees in this very small area may be affected during site clearance and formation for D4-1 and topographical changes by filling and cutting slope up to 62 m (Figure 12.12.7), although the height of slope to be expose by completion is 56 m. However the majority of this LR will remain unaffected by the Project and the overall magnitude of change is considered to be small.											
FLR 7 Lowland Woodland													
FLR -7.1	Vernon Pass Woodland	Outside RODP boundary	1.38	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This woodland is located outside the RODP boundary and therefore the Project will have no impact on it.											
FLR -7.2	Lowland Woodland at Fu Tei Au and Sheung Shui Water Treatment Works	A1-3 , A1-9 (AGR); A1-7(CA); A1-8 (G), A1-6 (OU-SPS)	4.89	3.78 (40%)	Large	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> About three quarters of this LR falls within the RODP and just over a third of this is on sites designated for land use that is incompatible with the current use e.g. a Police Driving and Traffic Complex (A1-8) and sewage pumping station (A1-6). During construction, site clearance and site formation will impact particularly on the trees here. The other third of the LR falls within sites A1-3 and A1-9 which are designated as agricultural and the LR may remain unaffected here. Overall given the small area affected but taking into account the loss of some trees, the magnitude of change is considered intermediate.											
FLR -7.3	Hung Kiu San Tsuen Lowland Woodland	DP9 Fanling Bypass Western Section; A1-11(G)	5.20	0.31 (100%)	Small	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> Only a very small area of this LR falls within the RODP, all of which will be affected by elements of the Project that are incompatible such as roads and interchange and a weapons training division (A1-11). Woodland here will be cleared prior to site formation. Since the area affected is so small, despite the lack of compatibility, the overall magnitude of change is considered to be small.											
FLR -7.4	Sacred Hill Lowland Woodland	B3-9(R2), B3-10(E), B3-12(E)	2.22	1.36 (100%)	Small	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> A small area of this woodland lies within the RODP, falling across various sites which are designated for incompatible uses such as medium density residential area (B3-9), school (B3-10, B3-12) as well as part of the distributor road. In these sites, site clearance and formation work will affect the trees which will be lost, and at operation this LR will have been lost. Overall the affected area is small, but incase intermediate numbers of trees have to be removed, the magnitude of change is considered intermediate.											
FLR -7.5	Ling Hill and Ling Shan Tsuen Lowland Woodland	Outside RODP boundary	6.88	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This woodland is located outside the RODP boundary and therefore the Project will have no impact on it.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approximate Area of LR (ha) in Study Area	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR 8 Shrubland / Grassland Mosaic													
FLR -8.1	Shrubland / Grassland Mosaic West and along Sheung Yue River and Ng Tung River	Outside RODP boundary	6.82	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This shrubland/grassland is located outside the RODP boundary and therefore the Project will have no impact on it.											
FLR -8.2	Fu Tei Au Shrubland / Grassland Mosaic	Outside RODP boundary	16.82	0.40 (100%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> Only a very small area of this LR falls within the RODP and of this, it is mainly along existing road. Since the road is unlikely to be affected by the Project the magnitude of change is considered to be small at worst during construction and operation.											
FLR -8.3	Shrubland / Grassland Mosaic at Cham Shan and Wa Shan	DP10 Fanling Bypass Eastern Section; A3-1 (G)	112.68	0.63 (100%)	Small	Poor	Poor	Temporary Short Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> A small area of this LR is located within the RODP in site A3-1 which is the proposed for the Fanling North Fresh Water Service Reservoir. The preliminary design of the reservoir and its access road suggests the site formation work required will affect a small area of this LR here (<1.0 ha). The highest proposed cut/ fill slopes will be 24 m with a maximum 40 degree angle for all slopes. The exposed slope at completion will be up to 18 m high as some of it will be underground. There will be some topography changes in this area as Figures 12.12.6 and 12.12.8 help illustrate. The existing vegetation in this area will also be lost during construction. At operation this small area will be incompatible with the current LR unless mitigation designs such as green roof are implemented. A small (<0.1 ha) part of this LR at the north east of Ng Tung River will also be adversely affected by the Fanling Bypass Eastern Section. Another very small part of this LR (<0.1 ha) near residential zone B1-7 currently lies along the existing road and is unlikely to be affected. A small area of this LR will be affected by the Project, but given the topographical changes, the overall magnitude of change is considered to be intermediate.											
FLR -8.4	Shrubland / Grassland Mosaic at Lung Shan	DP7 Utilization of Treated Sewage Effluent; D4-1 (G)	22.12	1.44 (100%)	Small	Poor	Poor	Temporary Short Term	Permanent	Irreversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> A small area of this LR is located within the RODP, all in site D4-1 which is the proposed site for the Fanling North Flushing Water Service Reservoir. The area is close to the existing Fresh Water Service Reservoir at north Tong Hang Tung and adjacent to the existing access road. The preliminary design of the reservoir and its access road, suggests the site formation work required will affect a small area of this LR (<1.5 ha). The highest proposed cut/ fill slopes for the reservoir will be 62 m with a maximum 40 degree angle for all slopes. The exposed slope at completion will be up to 56 m high as some of the slope will be underground. There will therefore be some topography changes in this area, but the highest cut slope in this area is located on a slope with steep existing topography as Figures 12.12.7 and 12.12.9 help illustrate. The existing shrubland/ grassland in this area will also be lost during construction although there is potential for landscaping of the reservoir roofs and cut/ fill slopes and remediation in future. At operation this small area will be largely incompatible with the current LR and will have changed land use. Despite the relatively small size of the area affected, the topographical changes are considered large, mainly due to their being an up to 62 m cut/fill slope above the reservoir within the hillside (although the hillside here is already steep). Overall the worst case scenario considers the magnitude of change is large during construction and operation.											
FLR 9 Agricultural Land													
FLR -9.1	Agricultural Lands in Ho Sheung Heung and Long Valley	Outside RODP boundary	12.22	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This agricultural land is located outside the RODP boundary and therefore the Project will have no impact on it.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approximate Area of LR (ha) in Study Area	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR -9.2	Fu Tei Au Agricultural Land	A1-8(G), A1-9 (AGR); A1-10 (A)	3.61	3.61 (75 %)	Large	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> All this patch of agricultural land around Fu Tei Au falls within the RODP and will mainly be impacted by sites with incompatible uses such as a Police Driving and Traffic Complex (A1-8) as well as road works and amenity use at A1-10. Agricultural land will be impacted here during site clearance and site formation. About one fourth of this LR can be preserve as agriculture land (A1-9) where no adverse impact is expected. During operation, the land use will have been mainly changed to incompatible uses except the area fall in A1-9. Although the area is not large, since essentially all this LR will be affected by incompatible elements of the Project, the magnitude of change is considered to be large.											
FLR -9.3	Agricultural Land between Ng Tung River and Shek Sheung River	Outside RODP boundary	2.69	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This agricultural land is located outside the RODP boundary and therefore the Project will have no impact on it.											
FLR -9.4	Tin Ping Shan Tsuen Agricultural Land	B3-6 (R2c) B3-7, B3-9 both (R2) B2-6, B2-11, B2-12, B3-3, B3-2 all (PRH); B3-4, B3-5, B3-10, B3-12 all (E), B2-8, B2-9, B2-10, B3-8 all (O)	14.13	12.80 (>95%)	Large	Poor	Fair	Permanent	Permanent	Irreversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> The majority of this LR falls within the RODP boundary and will be affected by sites with incompatible uses such as residential zones, one including a public transport interchange (B3-6, B3-7, B3-9); educational areas including Primary and Secondary Schools as well as Nursery and Kindergarten (B3-4, B3-5, B3-10, B3-12); public rental housing area (B2-6, B2-11, B2-12, B3-2, B3-3), the open spaces between these sites (B2-9, B3-8) and the distributor roads. At these sites, site clearance and site formation during the construction period will remove the agricultural land and at operation the land use will have changed to incompatible uses. Very small areas of this LR with the RODP lie within sites designated for open space along the river front (B2-8, B2-10) where the use may be more compatible with the current LR, but overall given the majority of the area will be affected by incompatible elements of the Project, the magnitude of change is large.											
FLR -9.5	Agricultural Land at Sheung Shui Wa Shan	DP9 Fanling Bypass Western Section; DP13 New SPS at B1-4 (OU-SPS); B1-2, B1-10 both (O); B1-6 (A); B1-7 (R2); A1-11(G)	8.47	2.48 (100%)	Medium	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> Under half of this LR falls within the RODP boundary but this small area is affected by roads and sites designated for incompatible land uses such as a Weapon Training Division (A1-11), a residential zone (B1-7) and amenities (B1-6). The agricultural land will be lost during site clearance and site formation here, and by operation this area of LR will be converted to incompatible land uses. Given the relatively small area however and absence of many trees on agricultural land, overall the magnitude of change is considered intermediate.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approximate Area of LR (ha) in Study Area	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR -9.6	Agricultural Land in Wu Nga Lok Yueng, Siu Hang San Tsuen, Siu Hang Tsuen and Shek Wu San Tsuen	DP10 Fanling Bypass Eastern Section; D2-2, D3-1b all (HOS), D3-1a (R1), D3-4, D3-6, D3-7, D3-3, D3-1c all (R1c), D2-12,D2-4 (R2), D2-9, D2-6, D3-8 (PRH); C2-7, C2-9, D3-11, D3-12 all (E); D2-3, D2-5, D2-8, D2-11, D3-5, D3-10 (O between built areas): C2-8(O for Town Park); D2-13, D3-2, D3-9, D3- 13 both (A); D2-14 (G);, D1-2, D1-3, D2-10, D1-4, D1-5 (O by river channel)	36.76	30.68 (95%)	Large	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> The majority of this LR falls within the RODP boundary and this is an area generally designated for comprehensive development. Most sites affecting this LR are incompatible with agriculture, such as: residential zones (D2-2, D2-4, D2-6, D2-9, D2-12, D3-1a, D3-1b, D3-1c, D3-3, D3-4, D3-6, D3-7, D3-8); educational areas including Primary and Secondary Schools as well as Nursery and Kindergartens (within D2-9, D3-4, D3-6, D3-8 which are residential overall, as well as specifically in C2-7, C2-9, D3-11 and D3-12); Community facilities including an integrated vocational and rehabilitation service centre, neighbourhood elderly community centre, residential home for elderly, post office and public transport interchange (within D3-8, D2-9). A small proportion of the LR falls in sites designated for open space between buildings in the developed area (D2-3, D2-5, D2-8, D2-11, D3-5, D3-10) as well as a Town Park at (C2-8) and land use here will change permanently, although it may be slightly more compatible with the current LR. A small area of this LR falls within sites D1-2, D1-3, D1-4, D1-5 and D2-10 which is designated as open space of no determined use but of these area, those falling within sites designated as open space near the river may be fairly compatible at operation. Overall the large area affected by incompatible elements of the Project will undergo large changes during site clearance and formation works and the magnitude of change is large.											
FLR -9.7	Agricultural Land South of Sha Tau Kok Road	Outside RODP boundary	8.95	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This agricultural land is located outside the RODP boundary and therefore the Project will have no impact on it.											
FLR 10 Open Space / Recreational Area													
FLR - 10.1	North District Sports Ground	Outside RODP boundary	6.19	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This LR is located outside the RODP boundary and therefore the Project will have no impact on it.											
FLR 11 Urban Development Area													
FLR - 11.1	Lo Wu Correctional Institution	Outside RODP boundary	2.91	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This LR is located outside the RODP boundary and therefore the Project will have no impact on it.											
FLR - 11.2	Sheung Shui Urban Development Area	C2-2, C2-8 both (O)	48.33	0.75 (100%)	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> Very small patches of this LR are located at the RODP boundary and the sites affecting it are designated for compatible uses (open space at C2-2, C2-8). During construction of open space, some site clearance including demolition of existing structures may be required as well as some site formation and the magnitude of change is considered small given the area affected. Once operational, the open space is considered integral to an urban development area and therefore the same land use as previously and the impact is negligible.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approximate Area of LR (ha) in Study Area	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR - 11.3	Fanling Urban Development Area	D2-13, D3-2 all (A); D2-14(G)	41.20	1.25 (<5%)	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> A very small area of this LR is located at the RODP boundary along Ma Sik Road and since this road will remain there will be no adverse impact here. A little further east the LR minimally overlaps with D2-13 and D3-2 designated for amenities (road/cycle path) and D2-14 designated for unspecified government use, both of which are compatible with the current LR. Overall magnitude of change is considered small during construction but once operational there will be no change to the resource use and the impact is negligible.											
FLR 12 Rural Development Area													
FLR - 12.1	Rural Development Area in Ngam Pin	Outside RODP boundary	2.64	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The rural development area is located outside the RODP boundary and therefore the Project will have no impact on it.											
FLR - 12.2	Rural Development Area in the Vicinity of Fu Tei Au	A1-3, A1-9 (AGR);A1-5 (A), A1-4 (O); A1-2 (G)	8.15	6.47 (10%)	Small	Fair	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> The majority of this LR lies within the RODP boundary and will mainly fall into sites A1-3 and A1-9 designated for agriculture which will therefore not adversely affect the LR. One small area will be affected by a proposed WSD facility at A1-2. Site clearance and formation will be necessary, possibly with some demolition of existing structures and at operation the new land use would not be compatible with the existing. A smaller area will be affected by a site designated for an open space (A1-4) and roadside amenity A1-5, and these land uses are considered to be compatible with the existing LR. Since in total only about 0.6 ha will be affected by incompatible elements of the Project, the magnitude of change is small.											
FLR - 12.3	Rural Development Area in the North of FLN NDA	A3-1 (G)	7.59	1.17 (100%)	Small	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> A small area of this LR will be affected by site A3-1 which is proposed as the Fanling North Fresh Water Service Reservoir and its access road. The LR here is mainly composed of the existing Firing Range with Fresh Water Service reservoir underneath and its access road, and has undergone some site formation already for the construction of these structures. The preliminary design of the new reservoir and its access road, suggests the site formation work required will affect a relatively small area of this LR here. The proposed highest cut/ fill slopes will be 24 m with a maximum 40 degree angle for all slopes and the exposed slope at completion will be up to 18 m high. There will therefore be some topography changes in this area as Figures 12.12.6 and 12.12.8 help illustrate. During construction some demolition or removal of existing structures may be required, along with site formation and despite the area affected being small, the magnitude of change to this LR type is considered to be intermediate at construction, mainly due to the topographical changes. At operation, the reservoir is fairly compatible with the current LR but the overall magnitude of change is considered to remain intermediate.											
FLR - 12.4	Rural Development Area in Sheung Shui Lowland Area	Road south of B3-10 (E);	35.70	0.13 (100%)	Small	Fair	Fair	Temporary Short Term	Permanent	Irreversible	Irreversible	Small	Small
		Only a very small area of this LR falls within the RODP and it will be adversely affected by the road along a secondary school (B3-10). Since the area going to be affected by the road is very small and the Project here is fairly compatible, the magnitude of change is considered to be small during construction and operation.											
FLR - 12.5	Wa Shan Rural Development Area	DP9 Fanling Bypass Western Section; B1-8 (R4) C1-3, D1-3 both (O)	22.65	0.88 (100%)	Small	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> Of the small area of this LR that falls within the RODP boundary, most lies within sites designated to be Fanling Bypass Western Section and open space (C1-3, D1-3). During construction at these sites, some site clearance and formation works may be required but given the relatively small area of LR affected, the magnitude of change is considered small. About 0.5 ha lies within site B1-7 which is designated for rural residential development which is fairly compatible with this LR. The magnitude of change is, at worst, small.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approximate Area of LR (ha) in Study Area	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR - 12.6	Lung Yeuk Tau Rural Development Area	Outside RODP boundary	54.07	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The rural development area is located outside the RODP boundary and therefore the Project will have no impact on it.											
FLR - 12.7	Rural Development Area at Wo Hop Shek and Lung Shan	D4-1 (G)	30.99	0.04 (0%)	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> A very small area of this LR falls in site D4-1, which is the proposed area for the Fanling North Flushing Water Service Reservoir. The affected area is currently a road and is unlikely to change in LR type so the magnitude of change is considered negligible.											
FLR - 12.8	Rural Development Area at Ma Shi Po	DP13 New SPS C2-3(OU-SPS); D2-9, D3-8 both (PRH); D2-2 (HOS); D3-3, D3-4, D3-6, D3-7 all (R1c), D2-4, D2-12(R2), C2-7, D3-11, D3-12 all (E); D2-13, D3-13 both (A); C2-5, C2-6 both (G); C2-8, C2-10, D2-8, D2-11, D3-5, D3-10 all (O)	12.72	12.72 (100%)	Large	Poor	Poor	Temporary Short Term	Permanent	Reversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> All this LR falls within the RODP boundary. Approximately 85% will be affected by sites designated for uses such as: government uses e.g. Sewage Pumping Station (C2-3), General Clinic/Health Centre (C2-5), Social Welfare Centre and Sports/Leisure Centre (C2-6); residential zones, some with commercial uses included (D2-12, D3-3, D3-4, D3-6, D3-7); public rental housing and HOS (D2-9, D3-8, D2-2); and educational developments (C2-7, D3-11, D3-12) and part of the main distributor road and associated amenity planting (D2-13, D3-13). Site clearance and formation works at all these sites will be necessary and impact this LR and during operation the new land use would be incompatible with the current LR. Some (approximately 5%) of this LR will be affected by sites designated to be open space (C2-10, D2-11, D3-5, D3-10) and about 10% of this LR lies within the designated site for Town Park (C2-8). Proposed recreational facilities included football pitch, volleyball court, tennis court grass pitches and a mini soccer court. Site clearance and formation work for these open spaces and town park will still be required here during construction causing impacts, despite the sites being more compatible with the existing LR at operation. Overall the compatibility of the Project with this LR is poor and given the area affected the magnitude of change is large.											
FLR - 12.9	Wu Nga Lok Yeung and Ling Shan Tsuen Rural Development Area	D3-1a (R1), D2-2, D3-1b both (HOS), D3-1c (R1c); D3-2, D3-9 all (A)	10.38	5.65 (95%)	Medium	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> Of all this LR within the Study Area, approximately half falls within the RODP boundary and will mainly be affected by sites designated as residential zones (D3-1a, D2-2, D3-1b, D3-1c) and part of the main distributor road. D3-1 largely falls on an area that currently hosts an abandoned development of some flats. These may need to be demolished and removed prior to site formation during construction phase but at operation the Project will be compatible here and land use will not change essentially, if anything improving it. In D2-2 the Project is less compatible as the existing development is more rural and will be affected by site formation works and the new built structures. A small area also falls within sites D3-2 and D3-9 which are designated as amenity areas which will be fairly compatible by operation. Overall the Project will be fairly compatible and since a medium area will be affected overall, the magnitude of change is considered intermediate.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approximate Area of LR (ha) in Study Area	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR 13 Industrial / Open Storage													
FLR - 13.1	Sheung Shui Industrial / Open Storage Area	DP7 Utilization of Treated Sewage Effluent at A2-3; DP9 Fanling Bypass Western Section; DP11 Further Expansion of Shek Wu Hui Sewage Treatment Works at A2-3 (OU-STW), DP13 New SPS at B2-3 (OU-SPS); A1-8, A1-11, B2-4 all (G); A1-9 (AGR) B2-2(OU-POFEFTS); B2-5(IC); B2-6, B2-7, B2-11, B2-12 all (PRH); B1-1, B1-2, B2-1, B2-8, B2-9 all (O); B2-4(G)	70.03	17.57 (100%)	Medium	Poor	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Large (partly beneficial)	Intermediate (partly beneficial)
		<u>Description of Key Impacts during Construction and Operation</u> The area of this LR that falls within the RODP boundary is largely open storage, car parks and warehouses. For the affected area north of Ng Tung River, this lies within sites designated for a Police Driving and Traffic Complex (A1-8), Fanling Bypass Western Section and a Weapons Training Division (A1-11). During construction at these sites, the sites will be cleared of their existing structures and some site formation work will be necessary. By operation these site will be fairly compatible with the current LR. For the area south of Ng Tung River, this will mainly be affected by sites A2-3 (designated for a part of the further expansion of the Shek Wu Hui Sewage Treatment Works and Utilization of Treated Sewage Effluent), B2-2 and B2-4 (potentially designated for Parking & Operation Facilities for Environmental Friendly Transport System), B2-4 (a government reserve), B2-6, B2-11, B2-7 and B2-12 (public rental housing with Nurseries and Kindergarten) and B2-5 (a CLP substation). Again during construction existing structures will be removed and site formation will be necessary but by operation the sites are considered fairly compatible with the existing LR. A small part of this LR lies in the sites designated for open space (B1-2, B2-1, B2-8 and B2-9) as well as agricultural land (A1-9), where no adverse impact is expected. Overall a reasonable area of this LR is affected by the Project, and at construction the magnitude of change is large due to site clearance work etc but the change in land use will partially improve the LR. At operation, the land uses will be fairly compatible with the existing, even enhancing it in places, and the magnitude of change is intermediate (partly beneficial).											
FLR - 13.2	Fanling Industrial Area	DP10 Fanling Bypass Eastern Section; DP12 Re-provision of Temporary Wholesale Market at D1-6; D2-15, D2-16 both (G); D2-17 (A)	16.08	2.65 (100%)	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small (mainly beneficial)	Small (beneficial)
		<u>Description of Key Impacts during Construction and Operation</u> The area of this LR that falls within the RODP boundary is mainly a covered Temporary Wholesale Market for Agricultural Products currently. It falls within two sites which are considered compatible: D1-6 designated for the North District Temporary Wholesale Market for Agricultural Products and Site D2-15 designated as government reserve and re-provisioning of Public Toilet and Government Refuse Collection Point. Site D2-16 is designated for government reserve which at worst will be fairly compatible. Some of the area will be affected by a new road connecting to a roundabout on Sha Tau Kok Road and D2-17 is designated as an amenity area; both these are considered fairly compatible uses with the existing industrial area. Overall the elements of the Project affecting this LR are compatible and also given the small area affected, the magnitude of change is small and mainly beneficial during construction and overall beneficial at operation.											
FLR 14 Major Transportation Corridor													
FLR - 14.1	MTRC East Rail	Outside RODP boundary	Length of LR in Study Area: 1700 m	Length of LR affected: 0 m	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This section of the MTRC is located outside the RODP boundary and therefore the Project will have no impact on it.											

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Approximate Area of LR (ha) in Study Area	Area of LR affected within NDA boundary (ha) (Approx. % of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR - 14.2	Sha Tau Kok Road (Lung Yeuk Tau)	DP10 Fanling Bypass Eastern Section; D1-5(O); DP12 Re-provision of Temporary Wholesale Market at D1-6; D2-14, D2-15 all (G)	Length of LR in Study Area: 1200 m	Length of LR within NDA 170 m Length affected: 170 m (100%)	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> A very small section of Sha Tau Kok Road lies within the RODP and is designated to remain as road, so while the magnitude of change may be small during construction due to modifications to the existing road, during operation the LR will remain the same and the magnitude of change will be negligible.											
FLR - 14.3	Fanling Highway	Outside RODP boundary	Length of LR in Study Area: 990 m	Length of LR affected: 0 m	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The Fanling Highway is located outside the RODP boundary and therefore the Project will have no impact on it.											
FLR - 14.4	MTRC near Fanling Highway	Outside RODP boundary	Length of LR in Study Area: 950 m	Length of LR affected: 0 m	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This section of the MTRC is located outside the RODP boundary and therefore the Project will have no impact on it.											

*Code	Land Use Type
A	Amenity
AGR	Agriculture
C	Commercial
CA	Conservation Area
CDA	Comprehensive Development Area
E	Education
G	Government
G-REC	Government Recreation
GB	Green Belt
HOS	Home Ownership Scheme
IC	Institution / Community
O	Open Space
OU-C,R&D	Other Specified Uses - Commercial, Research & Development
OU-DCS	Other Specified Uses - District Cooling System
OU-FR	Other Specified Uses - Firing Range
OU-NP	Other Specified Uses – Nature Park
OU-PFS	Other Specified Uses - Petrol Filling Station
OU-POFEFTS	Other Specified Uses - Parking & Operation Facilities for Environmental Friendly Transport System
OU-R&D	Other Specified Uses - Research & Development
OU-RAF	Other Specified Uses - Railway Associated Facilities
OU-SPS	Other Specified Uses - Sewage Pumping Station
OU-STW	Other Specified Uses - Sewage Treatment Works
OU-VC	Other Specified Uses – Visitor Centre
PRH	Public Rental Housing
PRH-LR	Public Rental Housing – Local Rehousing
R1	Residential Zone 1 - highest density
R1c	Residential Zone 1 - highest density - with commercial
R2	Residential Zone 2 - medium density
R2c	Residential Zone 2 - medium density - with commercial
R3	Residential Zone 3 - low density
R4	Residential Zone 4 – very low density
V	Village Type Development

Table 12.8.4 - Magnitude of change to FLN NDA LCAs

LCA Code	Name	Site No. (Land Use Type) Impacting LCA	Approximate Area of LCA (ha) in Study Area	Approximate Area of LCA affected within NDA boundary (ha) (Percentage impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLCA-1	Natural Hillside Landscape	Principally 'A sites' for Government Facilities Zone including A1-8, D4-1 all(G) A3-1 (G)	207.41	18.03 (100%)	Small	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> Most of this LCA falls outside the RODP boundary, but for the small area falling within the majority lies on sites designated for a Flushing Water Service Reservoir (D4-1) and a Fresh Water Service Reservoir (A3-1) and their associated access roads. Since this LCA already contains water reservoirs in both the areas where reservoirs are proposed, this is considered fairly compatible with the Project during operation, although it will be less compatible during the cut and fill work (see Figure 12.12.7). Small areas are affected by sites designated for other uses which are not compatible with the current character, such as government use for e.g. Police Driving and Traffic Complex (A1-8). Although the majority of this LCA will remain unaffected by the Project, and where it is affected it is by fairly compatible elements of the Project, but over 15 ha will suffer some change and the therefore magnitude of change is considered to be intermediate.											
FLCA-2	Rural and Urban Peripheral Village Landscape	Affected by all 'Sites' of the NDA i.e. 'A sites' for Government Facilities Zone, 'B sites' for West Residential Area, 'C sites' for Civic and Recreation Area and 'D sites' for the District Centre	305.25	29.98 (65%)	Medium	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> While the majority of this LCA falls outside the RODP boundary, a large area lies within it and will be affected by sites designated for land use that is not compatible with the current LCA e.g. Sewage Pumping Station (A1-6, B1-4, C2-3); proposed WSD use such as Pumping Station (A1-1, A1-2); Police Driving and Traffic Complex (A1-8); Weapons Training Division (A1-11) and roads; medium and low density residential areas with blocks up to 20 stories high (B1-7, B1-8, B1-9); schools at sites C2-6 and C2-7; and government uses such as Social Welfare Facility and Sports/Leisure Centre (within C2-6). There are areas that fall on sites designated for land use that is compatible with the current LCA, including A1-4, B1-2, B1-5, B1-10, C1-3, C2-4, C2-8, C2-10, D1-2, D1-3 which will all be open space, A1-5, A1-10, B1-6, C1-1, C1-2, D1-1 for amenities, A1-9 which will be agricultural land and A1-7 which will be a conservation area. A relatively large area of this LR in the northwest part of the RODP can be preserved by A1-3 and A1-9 designated for 'agriculture' and A1-7 designated as a 'conservation area'. Considering most of this LCA will not be affected by the Project and just under half of the affected area is compatible with the existing landscape, the overall magnitude of change is considered to be intermediate.											
FLCA-3	Urban Development Landscape	Principally affected by 'D sites' for the District Centre; small impact by 'B sites' for West Residential Area	106.85	6.73 (100%)	Small	Good	Good	Temporary Medium Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> The vast majority of this LCA falls outside the RODP boundary. For that within the boundary, it is mainly affected by D3-1 designated as a high density residential zone which is compatible with this LCA. Other areas affected are very small and on the edge of the LCA and overall the magnitude of change for this LCA is small.											
FLCA-4	Industrial Landscape	Principally affected by all 'B sites' for West Residential Area and 'A sites' for Government Facilities Zone with small impact by 'D sites' for the District Centre; small impact by 'B sites' for West Residential Area	105.54	26.91 (100%)	Medium	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Intermediate (partly beneficial)	Small (beneficial)
		<u>Description of Key Impacts during Construction and Operation</u> The majority of this LCA falls outside the RODP boundary. However for the area inside, it will be affected by sites designated for land use that is fairly compatible with the current LCA e.g. amenities (A2-1, A2-2, A2-4, D2-17), open space (B1-1, B2-1, B2-8, B2-9; the Parking & Operation Facilities for Environmental Friendly Transport System and Refuse Collection Point in B2-2, residential zones including public rental housing with schools and post office (B2-6, B2-7, B2-11, B2-12), government uses in A1-11, B2-4, D1-6; and sites that have good compatibility with the LCA such as the further expansion of the existing Sewage Treatment Plant at A2-3 and the Government Reserves at D2-15 and D2-16. Overall a medium area will be impacted by sites with fair to good compatibility and the magnitude of change is considered to be intermediate but partly beneficial during construction and beneficial overall by operation.											

LCA Code	Name	Site No. (Land Use Type) Impacting LCA	Approximate Area of LCA (ha) in Study Area	Approximate Area of LCA affected within NDA boundary (ha) (Percentage impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLCA-5	Lowland Agricultural Landscape	Principally affected by all 'B sites' for West Residential Area and 'D sites' for the District Centre with small impact by 'C sites' for Civic and Recreation Area	84.44	60.79 (100%)	Large	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> A large area of this LCA falls within the RODP and will be affected by sites designated for uses incompatible with this LCA, such as large residential areas (B2-11, B2-12, B3-2, B3-6, B3-7, B3-9, D2-2, D2-4, D2-6, D2-12, D3-1, D3-3, D3-4, D3-6, D3-7, D3-8) and residential housing areas including post offices and public transport interchanges (B2-12, B3-6, D2-9), and educational facilities (within B3-6, D2-9, D3-4, D3-6, D3-9 and in B3-4, B3-5, B3-10, B3-12, D3-11, D3-12). Some of the sites affecting this LCA are designated for open space but while this would appear compatible with the LCA initially, since they are fragmented by the other developments that are incompatible (as described); the overall magnitude of change is considered large.											
FLCA-6	Major Transportation Corridor Landscape	Principally impact by 'D sites' for the District Centre	Length of LCA in Study Area: 3990 m	Length of LCA within NDA: 200 m Length of LCA affected: 200 m (100%)	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> A very small area of this LCA, namely a short stretch of the Sha Tau Kok Road, falls within the RODP and it is proposed to be upgraded but not changed. Therefore during construction the magnitude of change may be small but by operation, it will be negligible.											
FLCA-7	Major Water Course Corridor Landscape	Mildly affected by all 'Sites' of the NDA i.e.' A sites' for Government Facilities Zone Area, 'B sites' for West Residential Area, 'C sites' for Civic and Recreation Area and 'D sites' for the District Centre	Length of LCA in Study Area: 8650 m	Length of LCA within NDA: 4920 m Length of LCA affected: 790 m (15%)	Medium	Fair	Good	Temporary Medium Term	Permanent	Reversible	Irreversible	Intermediate	Small
		<u>Description of Key Impacts during Construction and Operation</u> Where it flows through the RODP, this LCA may be slightly affected along its banks by the periphery of some incompatible sites, but most of the sites along the banks are designated as open space and will not affect the LCA. At Ma Wat River in the south east however approximately 250 m of this channelized river will have to be diverted for the construction of the Fanling Bypass Eastern Section (DP10) and the impacts of this are fully assessed in the DP Package 12D . Overall this LCA will mainly be affected by the Fanling Bypass Eastern Section in the south east, but the majority will only be mildly affected by the Project. The magnitude of change is considered to be intermediate at construction when the diversion takes place. The river is already channelized however and at operation will flow through a similar channelized section, and the main Ng Tung River will be negligibly affected, so the overall magnitude of change is considered to be small.											

*Code	Land Use Type
A	Amenity
AGR	Agriculture
C	Commercial
CA	Conservation Area
CDA	Comprehensive Development Area
E	Education
G	Government
G-REC	Government Recreation
GB	Green Belt
HOS	Home Ownership Scheme
IC	Institution / Community
O	Open Space
OU-C,R&D	Other Specified Uses - Commercial, Research & Development
OU-DCS	Other Specified Uses - District Cooling System
OU-FR	Other Specified Uses - Firing Range
OU-NP	Other Specified Uses – Nature Park
OU-PFS	Other Specified Uses - Petrol Filling Station
OU-POFEFTS	Other Specified Uses - Parking & Operation Facilities for Environmental Friendly Transport System
OU-R&D	Other Specified Uses - Research & Development
OU-RAF	Other Specified Uses - Railway Associated Facilities
OU-SPS	Other Specified Uses - Sewage Pumping Station
OU-STW	Other Specified Uses - Sewage Treatment Works
OU-VC	Other Specified Uses – Visitor Centre
PRH	Public Rental Housing
PRH-LR	Public Rental Housing – Local Rehousing
R1	Residential Zone 1 - highest density
R1c	Residential Zone 1 - highest density - with commercial
R2	Residential Zone 2 - medium density
R2c	Residential Zone 2 - medium density - with commercial
R3	Residential Zone 3 - low density
R4	Residential Zone 4 – very low density
V	Village Type Development

12.8.2 Significance of Landscape Impacts before Mitigation

The potential significance of landscape impacts during the construction and operational phases, before mitigation is provided in **Tables 12.8.5 (LR)** and **12.8.6 (LCA)** for KTN and **Tables 12.8.7 (LR)** and **12.8.8 (LCA)** for FLN respectively. The assessment follows the methodology proposed in **Section 12.4** and the matrix provided in **Table 12.4.1**.

12.8.2.1 Kwu Tung North NDA

The significances of impacts before mitigation on KTN NDA LR and LCAs are detailed in **Tables 12.8.5** and **12.8.6** below and summaries of the outcome provided after each table.

Table 12.8.5 - Significance of impacts before mitigation on KTN NDA LR

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
KLR 1	Channelized Water Course					
KLR-1.1	Ng Tung River (Channelised)	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR-1.2	Shek Sheung River (Channelised)	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR-1.3	Sheung Yue River (Channelised)	Medium	Small	Negligible	Slight	Insignificant
KLR-1.4	Water Course Network in Long Valley (Channelised)	Medium	Intermediate	Intermediate	Moderate	Moderate
KLR 2	Water Course					
KLR-2.1	Streams in Kwu Tung	Medium	Large	Large	Moderate	Moderate
KLR-2.2	Natural Streams at Tai Shek Mo	High	Negligible	Negligible	Insignificant	Insignificant
KLR-2.3	Natural Streams at Ki Lun Shan	High	Negligible	Negligible	Insignificant	Insignificant
KLR-2.4	Natural Streams at Ma Tso Lung	High	Intermediate	Intermediate	Moderate	Moderate
KLR 3	Water Pond					
KLR-3.1	Ho Sheung Heung Water Ponds	High	Intermediate	Intermediate	Moderate	Moderate
KLR-3.2	Long Valley Water Ponds	High	Negligible	Negligible	Insignificant	Insignificant
KLR-3.3	Fung Kong Shan Water Ponds	Medium	Large	Large	Substantial	Substantial
KLR-3.4	Fu Tei Au Water Ponds	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR-3.5	Water Ponds beside Kam Hang Road	High	Negligible	Negligible	Insignificant	Insignificant
KLR-3.6	Water Ponds at Pak Shek Au	Medium	Large	Large	Moderate	Moderate
KLR-3.7	Water Ponds at Tit Hang	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR-3.8	Water Ponds within the Closed Area	High	Negligible	Negligible	Insignificant	Insignificant

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
KLR-3.9	Kam Tsin Tsuen Pond	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR-3.10	Wai Loi Tsuen Water Pond	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR 4	Marsh					
KLR-4.1	Marshes in Long Valley	High	Negligible	Negligible	Insignificant	Insignificant
KLR-4.2	Mitigation Wetland	High	Small	Small	Moderate	Moderate
KLR-4.3	Wetland/ Marsh in the Closed Area	High	Negligible	Negligible	Insignificant	Insignificant
KLR-4.4	Marsh around Pai Tau Lo and Tsung Yeun	High	Negligible	Negligible	Insignificant	Insignificant
KLR 5	Plantation					
KLR-5.1	Plantation South of Fanling Highway	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR-5.2	Plantation in the Vicinity of Hakka Wai	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR-5.3	Plantation in the Vicinity of Wai Loi Tsuen	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR-5.4	OVTs along Fanling Highway and Castle Peak Road	High	Small	Small	Moderate	Moderate
KLR 6	Hillside Woodland					
KLR-6.1	Ki Lun Shan Hillside Woodland	High	Negligible	Negligible	Insignificant	Insignificant
KLR-6.2	Tai Shek Mo Hillside Woodland	High	Intermediate	Intermediate	Moderate	Moderate
KLR-6.3	Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong	High	Large	Large	Substantial	Substantial
KLR-6.4	Ho Sheung Heung Fung Shui Woodland	High	Small	Small	Moderate	Moderate
KLR 7	Lowland Woodland					
KLR-7.1	Kwu Tung South Road Lowland Woodland	High	Negligible	Negligible	Insignificant	Insignificant
KLR-7.2	Lowland Woodland in the Vicinity of Kam Tsin	High	Negligible	Negligible	Insignificant	Insignificant
KLR-7.3	Lowland Woodland in Pak Shek Au and Tong Kok	High	Large	Large	Substantial	Substantial
KLR-7.4	Sheung Shui Water Treatment Works Lowland Woodland	High	Negligible	Negligible	Insignificant	Insignificant
KLR-7.5	Vernon Pass Woodland	Medium	Negligible	Negligible	Insignificant	Insignificant

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
KLR 8	Shrubland/Grassland Mosaic					
KLR-8.1	Ki Lun Shan Shrubland/ Grassland Mosaic	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR-8.2	Fung Kong Shan Shrubland/Grassland Mosaic	Medium	Small	Small	Slight	Slight
KLR-8.3	Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Ranges Foothills	Medium	Large	Large	Substantial	Substantial
KLR-8.4	Shrubland/Grassland Mosaic along Sheung Yue River, Ng Tung River and Fanling Highway	Low	Negligible	Negligible	Insignificant	Insignificant
KLR-8.5	Fu Tei Au Shrubland/Grassland Mosaic	Low	Negligible	Negligible	Insignificant	Insignificant
KLR 9	Agricultural Land					
KLR-9.1	Long Valley Agricultural Land	High	Intermediate	Intermediate	Moderate	Moderate
KLR-9.2	Ho Sheung Heung Agricultural Land	Medium	Small	Small	Slight	Slight
KLR-9.3	Agricultural Lands in Shek Tsai Leng, Tong Kok and Fung Kong	Medium	Large	Large	Moderate	Moderate
KLR-9.4	Other Agricultural Lands in KTN	Medium	Intermediate	Intermediate	Moderate	Moderate
KLR-9.5	Other Orchard Areas in KTN	Medium	Small	Small	Slight	Slight
KLR 10	Open Space / Recreational Area					
KLR-10.1	Hong Kong Golf Club	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR-10.2	Sheung Shui Community Sports	Medium	Large	Intermediate	Substantial	Moderate
KLR-10.3	Lo Wu Saddle Club	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR 11	Urban Development Area					
KLR-11.1	Lo Wu Correctional Institution	Low	Negligible	Negligible	Insignificant	Insignificant
KLR-11.2	Existing formation site for proposed Kwu Tung MTRC Station	Low	Small	Small	Slight	Slight
KLR 12	Rural Development Area					
KLR-12.1	Ho Sheung Heung Rural Development Area	Medium	Intermediate	Intermediate	Moderate	Moderate
KLR-12.2	Rural Development Area in Long Valley, Yin Kong, Tsung Pak Long and Hakka Wai	High	Small	Small	Moderate	Moderate

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
KLR-12.3	Rural Development Area in Ngam Pin	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR-12.4	Rural Development Area to the East of MTRC East Railway Line	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR-12.5	Rural Development Area to the North of Hong Kong Golf Club	Low	Negligible	Negligible	Insignificant	Insignificant
KLR-12.6	Kam Tsin Rural Development Area	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR-12.7	Kwu Tung Fresh Water Service Reservoir	Low	Negligible	Negligible	Insignificant	Insignificant
KLR-12.8	Rural Development Area of Europa Garden and Valais	Low	Negligible	Negligible	Insignificant	Insignificant
KLR-12.9	Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang	Medium	Large	Large	Moderate	Moderate
KLR-12.10	Lo Wu Rifle Range	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR-12.11	Rural Development Area in Ma Tso Lung	Medium	Small	Small	Slight	Slight
KLR-12.12	Fanling Lodge	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR 13	Industrial / Open Storage					
KLR-13.1	Sheung Shui Industrial Area	Low	Negligible	Negligible	Insignificant	Insignificant
KLR-13.2	Industrial / Open Storage Area in Yin Kong	Low	Large (partly beneficial)	Intermediate (partly beneficial)	Slight	Slight beneficial
KLR-13.3	Industrial/Open Storage in Shek Tsai Leng, Tong Kok and Fung Kong	Low	Large (partly beneficial)	Large (partly beneficial)	Slight	Slight beneficial
KLR-13.4	Industrial/Open Storage in Pak Shek Au, Chau Tau and Foothill of Ki Lun Shan	Low	Large (partly beneficial)	Intermediate (partly beneficial)	Slight	Slight beneficial
KLR 14	Major Transportation Corridor					
KLR-14.1	Fanling Highway and nearby associated roads	Medium	Intermediate	Intermediate	Moderate	Moderate
KLR-14.2	MTRC East Rail (to/from Lo Wu)	Low	Negligible	Negligible	Insignificant	Insignificant

In summary, in KTN NDA, substantial adverse impacts are predicted at construction for the following five LRs: Fung Kong Shan Water Ponds KLR-3.3, Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong KLR-6.3, Lowland Woodland in Pak Shek Au and Tong Kok KLR-7.3, Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Range Foothills KLR-8.3, and Sheung Shui Community Sports KLR-10.2. These impacts are predicted to remain substantially adverse at operation prior to mitigation for all these LRs except Sheung Shui Community Sports KLR-10.2 where the land use at operation will be compatible for the some of the area with a new Standard Swimming Pool and Sport Centre (E1-5) such that the impact reduces to moderate at operation prior to mitigation.

There LRs which are predicted to experience moderate adverse impacts at construction before mitigation are: KLR-1.4 Water Course Network in Long Valley (Channelised), Streams in Kwu Tung KLR-2.1, Natural Streams at Ma Tso Lung KLR-2.4, Water Ponds (Ho Sheung Heung Water Ponds KLR-3.1, Water Ponds at Pak Shek Au KLR-3.6), Mitigation Wetland KLR-4.2, OVTs along Fanling Highway and Castle Peak Road KLR-5.4, Tai Shek Mo Hillside Woodland KLR-6.2, Ho Sheung Heung Fung Shui Woodland KLR-6.4, Agricultural land (in Long Valley KLR-9.1, in Shek Tsai Leng, Tong Kok and Fung Kong KLR-9.3 and others in KTN KLR-9.4), Rural Development Areas (around Ho Sheung Heung KLR-12.1, in Long Valley, Yin Kong, Tsung Pak Long and Hakka Wai KLR-12.2 and in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang KLR-12.9), and Fanling Highway and nearby associated roads KLR-14.1. There impacts are predicted to remain moderately adverse at operation for all these LRs.

The remaining LRs will all experience slight adverse impacts or insignificant impacts at construction and operation, with the exception of the Industrial / Open Storage Areas in Yin Kong (KLR-13.2), Shek Tsai Leng, Tong Kok and Fung Kong (KLR-13.3) and Pak Shek Au, Chau Tau and Foothill of Ki Lun Shan (KLR-13.4) where the land use will improve, largely due to residential uses, and the impacts at operation are considered to be slightly beneficial overall.

Table 12.8.6 - Significance of impacts before mitigation on KTN NDA LCAs

LCA Code	Name	LCA Sensitivity (High/ Medium/ Low)	Magnitude of change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
KLCA-1	Natural Hillside Landscape	High	Intermediate	Intermediate	Substantial	Substantial
KLCA-2	Rural and Urban Peripheral Village Landscape	Medium	Large	Large	Moderate	Moderate
KLCA-3	Urban Development Landscape	Low	Negligible	Negligible	Insignificant	Insignificant
KLCA-4	Industrial Landscape	Low	Intermediate (partly beneficial)	Small (beneficial)	Slight	Slight beneficial
KLCA-5	Lowland Agricultural Landscape	High	Intermediate	Intermediate	Moderate	Moderate
KLCA-6	Major Transportation Corridor Landscape	Medium	Small	Small	Moderate	Moderate
KLCA-7	Major Water Course Corridor Landscape	Medium	Small	Small	Slight	Slight

In summary for the LCAs, substantially adverse impacts are predicted at construction and operation before mitigation for Natural Hillside Landscape (KLCA-1) (due to large topographical changes (See **Figures 12.11.5a-d**) in constructing the water service reservoirs in G1-4 and G1-5, even though the impacted area is relatively small) Rural and Urban Peripheral Village Landscape (KLCA-2), Lowland Agricultural Landscape (KLCA-5) will experience moderate adverse impacts during construction and operation, mainly due to large area of land to be affected by the Project. In addition the Major Transportation Corridor Landscape (KLCA-6) will experience moderate adverse impacts during construction and operation prior to mitigation, mainly due to the potential loss of roadside greening along Fanling Highway.

The remaining LCAs are all expected to experience slight adverse impacts at construction and operation, except the Urban Development Landscape (KLCA-3) which is expected to experience insignificant impacts (as only a small area of within the NDA (the Lo Wu Correctional Institution) and no changes are expected there) and the Industrial Landscape KLCA-4 which is expected to slightly benefit from the Project by operation due to the compatible and possible enhancement of land uses here e.g. industrial/ open storage areas to residential areas.

12.8.2.2 Fanling North NDA

The significance of impacts on FLN NDA LRs and LCAs are detailed in **Tables 12.8.7** and **12.8.8** below and summaries for each provided after the tables.

Table 12.8.7- Significance of impacts before mitigation on FLN NDA LRs

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
FLR 1	Channelized Water Course					
FLR-1.1	Ng Tung River (Fanling District) (Channelized)	Medium	Small	Small	Slight	Slight
FLR-1.2	Shek Sheung River (Channelized)	Medium	Small	Small	Slight	Slight
FLR-1.3	Sheung Yue River (Channelized)	Medium	Negligible	Negligible	Insignificant	Insignificant
FLR-1.4	Ma Wat River (Channelized)	Medium	Large	Intermediate	Substantial	Moderate
FLR-1.5	Water Course through Ma Shi Po Agricultural Land (Channelized)	Low	Large	Large	Moderate	Moderate
FLR 2	Water Course					
FLR-2.1	Natural Stream in Tin Ping Shan Agricultural Land	Medium	Large	Large	Moderate	Moderate
FLR-2.2	Natural Stream at Cham Shan	Medium	Negligible	Negligible	Insignificant	Insignificant
FLR-2.3	Natural Streams at Lung Shan	High	Negligible	Negligible	Insignificant	Insignificant
FLR-2.4	Natural Streams at Siu Hang San Tsuen	High	Small	Small	Moderate	Moderate
FLR 3	Water Pond					
FLR-3.1	Ho Sheung Heung and Long Valley Water Ponds	High	Negligible	Negligible	Insignificant	Insignificant
FLR-3.2	Water Ponds within the Closed Area	High	Negligible	Negligible	Insignificant	Insignificant
FLR-3.3	Fu Tei Au Water Ponds	Medium	Small	Small	Slight	Slight
FLR-3.4	Water Ponds in Eastern Rural Area	Medium	Negligible	Negligible	Insignificant	Insignificant
FLR-3.5	Wai Loi Tsuen Water Pond	Medium	Negligible	Negligible	Insignificant	Insignificant
FLR 4	Marsh					
FLR-4.1	Marshes in Long Valley and near Tsung Yeun	High	Negligible	Negligible	Insignificant	Insignificant
FLR-4.2	Mitigation Wetland	High	Large	Large	Substantial	Substantial
FLR 5	Plantation					
FLR-5.1	Plantation in the Vicinity of Wai Loi Tsuen	Medium	Negligible	Negligible	Insignificant	Insignificant

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
FLR-5.2	Ha Pak Tsuen Plantation	High	Negligible	Negligible	Insignificant	Insignificant
FLR-5.3	Plantation in the Vicinity of On Kwok Villa and Noble Hill	Medium	Small	Small	Slight	Slight
FLR 6	Hillside Woodland					
FLR-6.1	Sheung Shui Water Treatment Works Hillside Woodland	High	Small	Small	Moderate	Moderate
FLR-6.2	Cham Shan and Wa Shan Hillside Woodland	High	Large	Large	Substantial	Substantial
FLR-6.3	Ma Wat Wai Hillside Woodland	High	Negligible	Negligible	Insignificant	Insignificant
FLR-6.4	Hillside Woodland at Lung Shan and Wa Mei Shan	High	Small	Small	Moderate	Moderate
FLR 7	Lowland Woodland					
FLR-7.1	Vernon Pass Woodland	Medium	Negligible	Negligible	Insignificant	Insignificant
FLR-7.2	Lowland Woodland at Fu Tei Au and Sheung Shui Water Treatment Works	Medium	Intermediate	Intermediate	Moderate	Moderate
FLR-7.3	Hung Kiu San Tsuen Lowland Woodland	Medium	Small	Small	Slight	Slight
FLR-7.4	Sacred Hill Lowland Woodland	High	Intermediate	Intermediate	Moderate	Moderate
FLR-7.5	Ling Hill and Ling Shan Tsuen Lowland Woodland	High	Negligible	Negligible	Insignificant	Insignificant
FLR 8	Shrubland/Grassland Mosaic					
FLR-8.1	Shrubland/Grassland Mosaic West of and along Sheung Yue River and Ng Tung River	Low	Negligible	Negligible	Insignificant	Insignificant
FLR-8.2	Fu Tei Au Shrubland/Grassland Mosaic	Low	Small	Small	Slight	Slight
FLR-8.3	Shrubland/Grassland Mosaic at Cham Shan and Wa Shan	Medium	Intermediate	Intermediate	Moderate	Moderate
FLR-8.4	Shrubland/Grassland Mosaic at Lung Shan	Medium	Large	Large	Substantial	Substantial

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
FLR 9	Agricultural Land					
FLR-9.1	Agricultural Land in Ho Sheung Heung and Long Valley	High	Negligible	Negligible	Insignificant	Insignificant
FLR-9.2	Fu Tei Au Agricultural Land	Medium	Large	Large	Moderate	Moderate
FLR-9.3	Agricultural Land between Ng Tung River and Shek Sheung River	Medium	Negligible	Negligible	Insignificant	Insignificant
FLR-9.4	Tin Ping Shan Tsuen Agricultural Land	Medium	Large	Large	Moderate	Moderate
FLR-9.5	Agricultural Land at Sheung Shui Wa Shan	Medium	Intermediate	Intermediate	Moderate	Moderate
FLR-9.6	Agricultural Land in Wu Nga Lok Yueng, Siu Hang San Tsuen, Siu Hang Tsuen and Shek Wu San Tsuen	Medium	Large	Large	Moderate	Moderate
FLR-9.7	Agricultural Land in South of Sha Tau Kok Road	Medium	Negligible	Negligible	Insignificant	Insignificant
FLR 10	Open Space / Recreational Area					
FLR-10.1	North District Sports Ground	Low	Negligible	Negligible	Insignificant	Insignificant
FLR 11	Urban Development Area					
FLR-11.1	Lo Wu Correctional Institution	Low	Negligible	Negligible	Insignificant	Insignificant
FLR-11.2	Sheung Shui Urban Development Area	Low	Small	Negligible	Slight	Insignificant
FLR-11.3	Fanling Urban Development Area	Low	Small	Negligible	Slight	Insignificant
FLR 12	Rural Development Area					
FLR-12.1	Rural Development Area in Ngam Pin	Low	Negligible	Negligible	Insignificant	Insignificant
FLR-12.2	Rural Development Area in the Vicinity of Fu Tei Au	Medium	Small	Small	Slight	Slight
FLR-12.3	Rural Development Area in the North of FLN NDA	Low	Intermediate	Intermediate	Moderate	Moderate
FLR-12.4	Rural Development Area in Sheung Shui Lowland Area	Medium	Small	Small	Slight	Slight
FLR-12.5	Wa Shan Rural Development Area	Medium	Small	Small	Slight	Slight

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
FLR-12.6	Lung Yeuk Tau Rural Development Area	Medium	Negligible	Negligible	Insignificant	Insignificant
FLR-12.7	Rural Development Area at Wo Hop Shek and Lung Shan	Low	Small	Negligible	Slight	Insignificant
FLR-12.8	Rural Development Area around Ma Shi Po	Medium	Large	Large	Moderate	Moderate
FLR-12.9	Wu Nga Lok Yeung and Ling Shan Tsuen Rural Development Area	Low	Intermediate	Intermediate	Slight	Slight
FLR 13	Industrial / Open Storage					
FLR-13.1	Sheung Shui Industrial/Open Storage Area	Low	Large (partly beneficial)	Intermediate (partly beneficial)	Slight	Slight beneficial
FLR-13.2	Fanling Industrial Area	Low	Small (mainly beneficial)	Small (beneficial)	Slight beneficial	Moderate beneficial
FLR 14	Major Transportation Corridor					
FLR-14.1	MTRC East Rail	Low	Negligible	Negligible	Insignificant	Insignificant
FLR-14.2	Sha Tau Kok Road (Lung Yeuk Tau)	Medium	Small	Negligible	Slight	Slight
FLR-14.3	Fanling Highway	Medium	Negligible	Negligible	Insignificant	Insignificant
FLR-14.4	MTRC near Fanling Highway	Low	Negligible	Negligible	Insignificant	Insignificant

In summary, in FLN NDA, substantial adverse impacts are predicted at construction for the following four LRs: Ma Wat River (Channelized) (FLR-1.4), Mitigation Wetland (FLR-4.2), Cham Shan and Wa Shan Hillside Woodland (FLR-6.2), and Shrubland/Grassland Mosaic at Lung Shan (FLR-8.4). All these will experience substantial adverse impacts at operation also, except Ma Wat River (Channelized) (FLR-1.4) which is predicted to have moderate adverse impacts at operation.

The LRs which are predicted to experience moderately adverse impacts at construction before mitigation are: Water Course through Ma Shui Po Agricultural Land (FLR-1.5), Natural Streams in Tin Ping Shan Agricultural Land (FLR-2.1), Natural Streams at Siu Hang San Tsuen (FLR-2.4), Hillside Woodland at Sheung Shui Water Treatment Works (FLR-6.1) and at Lunch Shan and Wa Mei Shan (FLR-6.4), Lowland Woodland at Fu Tei Au and Sheung Shui Water Treatment Works (FLR-7.2) and at Sacred Hill (FLR-7.4), Shrubland/Grassland Mosaic at Cham Shan and Wa Shan (FLR-8.3), Fu Tei Au Agricultural Land (FLR-9.2), Tin Ping Shan Tsuen Agricultural Land (FLR-9.4), Agricultural Land at Sheung Shui Wa Shan (FLR-9.5), Agricultural Land in Wu Nga Lok Yeung, Siu Hang San Tsuen, Siu Hang Tsuen and Lung Yeuk Tau (FLR-9.6) and Rural Development Areas in the North of FLN NDA (FLR-12.3) and around Ma Shi Po (FLR-12.8).

The remaining LRs will all experience slight adverse impacts or insignificant impacts at construction and operation, with the exception of all the Industrial / Open Storage Areas i.e. those in Sheung Shui (FLR13.1) and Fanling Industrial Area (FLR13.2), where the land use will improve, largely due to residential uses, and the impacts at operation are considered to be slightly and moderately beneficial overall respectively.

Table 12.8.8 - Significance of impacts before mitigation on FLN NDA LCAs

LR/LCA Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
FLCA-1	Natural Hillside Landscape	High	Intermediate	Intermediate	Moderate	Moderate
FLCA-2	Rural and Urban Peripheral Village Landscape	Medium	Intermediate	Intermediate	Moderate	Moderate
FLCA-3	Urban Development Landscape	Low	Small	Small	Slight	Slight
FLCA-4	Industrial Landscape	Low	Intermediate (partly beneficial)	Small (beneficial)	Slight	Slight beneficial
FLCA-5	Lowland Agricultural Landscape	Medium	Large	Large	Moderate	Moderate
FLCA-6	Major Transportation Corridor Landscape	Low	Small	Negligible	Slight	Insignificant
FLCA-7	Major Water Course Corridor Landscape	Medium	Intermediate	Small	Moderate	Slight

Natural Hillside Landscape in the FLN area (FLCA-1), Rural and Urban Peripheral Village Landscape (FLCA-2), Lowland Agricultural Landscape (FLCA-5) and Major Water Course Corridor Landscape (FLCA-7) are expected to experience moderately adverse impacts during construction and all will remain so at operation except FLCA-7 which will experience slightly adverse impacts at operation before mitigation.

The remaining LCAs are all expected to experience slight adverse impacts at construction and operation, or insignificant impacts, except the Industrial Landscape (FLCA-4) which is expected to slightly benefit from the Project by operation due to the compatible and possible enhancement of land uses here e.g. industrial/ open storage areas to residential areas.

12.9 Landscape & Visual Mitigation Measures

At the Project planning stage, many factors have been considered to avoid, reduce and/ or help compensate for the potential L&V impacts of the NDAs, with highest priority given to avoidance. Several alternative layouts/profiles for the Project have been assessed, taking into account potential L&V impacts, but also taking account of other considerations such as geotechnical constraints, existing settlements and infrastructure, as well as other environmental factors such as cultural heritage, water, noise etc. A summary of the planning context, framework and concepts that have shaped the revised RODPs, highlighting those that minimize the negative L&V impacts of each NDA, is provided in **Section 12.5.2**.

As well as the planning principles and concepts outlined above and in **Section 12.5.2** (considered as mitigation prior to construction), measures to further avoid, as well as reduce and/or compensate for particular unavoidable impacts during the construction and/or operation of the Project have all been considered, with highest priority given to impact avoidance and reduction.

These proposed mitigation measures should be implemented as early as possible but those listed here have not been categorized separately as 'design', 'construction' or 'operation' mitigation measures due to measures often spanning different phases of the Project. For example soft landscape mitigation measures will be considered during detailed design, most likely be implemented during construction, and their full effect often not appreciated until 10 years on, when the Project is operational. Equally, detailed design measures such as fine tuning the footprint and design of a building may reduce construction impacts but will also reduce operation impacts.

Each NDA has multiple components due to be built in different phases and includes projects designated for stand-alone EIA under Schedule 2 of the EIAO. For each component or phase, all of the proposed mitigation measures should be considered and implemented as appropriate and further details specific to the Schedule 2 DPs can be found in **DP Packages 12A-D**.

The proposed mitigation measures for the Project are summarized in **Table 12.9.1** below and described in detail following. The same table also lists the agents responsible for the capital funding, the implementation and the maintenance of the suggested measures. For the Schedule 2 DPs, these agents may differ and further details of specific mitigation measures for Schedule 2 DPs are provided in **DP Packages 12A-D**.

Table 12.9.1–Summary of Proposed Mitigation Measures

Mitigation Measure Code	Summary Description	Capital Funding Agency ⁽¹⁾	Implementation Agency	Post-Construction Maintenance Agency ⁽²⁾
MM1	Minimum Topographical Change	Government/ Private Sector	Contractors of the Government/ Private Sector	n/a
MM2	Detailed Design - Visual	Government/ Private Sector	Contractors of the Government/ Private Sector	Building proponents/ HyD for noise barriers
MM3	Open Space Provision	Government/ Private Sector	Contractors of the Government/ Private Sector	LCSD
MM4	Tree Protection & Preservation	Government/ Private Sector	Contractors of the Government/ Private Sector	n/a
MM5	Tree Transplantation	Government/ Private Sector	Contractors of the Government/ Private Sector	LCSD
MM6	Slope Landscaping	Government/ Private Sector	Contractors of the Government/ Private Sector	HyD/ LCSD
MM7	Compensatory Planting	Government/ Private Sector	Contractors of the Government/ Private Sector	HyD/ LCSD
MM8	Woodland Compensatory Planting	Government/ Private Sector	Contractors of the Government/ Private Sector	AFCD ⁽³⁾
MM9	Vertical Greening	Government/ Private Sector	Contractors of the Government/ Private Sector	Building proponents
MM10	Green Roof	Government/ Private Sector	Contractors of the Government/ Private Sector	Building proponents
MM11	Screen Planting	Government/ Private Sector	Contractors of the Government/ Private Sector	HyD/ LCSD
MM12	Road Greening	Government/ Private Sector	Contractors of the Government/ Private Sector	HyD/ LCSD
MM13	Marsh/Wetland Compensation	Government/ Private Sector	Contractors of the Government/ Private Sector	AFCD ⁽⁴⁾
MM14.1	Watercourse Impact Mitigation - Reprovision of Natural Stream	Government/ Private Sector	Contractors of the Government/ Private Sector	DSD/ LCSD/ AFCD ⁽⁵⁾
MM14.2	Watercourse Impact Mitigation - Stream Buffer Planting	Government/ Private Sector	Contractors of the Government/ Private Sector	LCSD/ AFCD ⁽⁶⁾

⁽¹⁾ CEDD/ other government departments will be responsible for funding except where sites are tendered out to private investors, when these investors will be responsible for the funding. For Schedule 2 DPs, responsible agents are detailed in **DP Packages 12A-D**.

⁽²⁾ The Contractor will be responsible for landscaping during the agreed establishment and maintenance period. Other designated maintenance agents to take up maintenance of landscaping after end of agreed period.

⁽³⁾ AFCD is suggested as the management department for specific woodland compensatory planting as detailed in **Chapter 13** of the EIA Report.

⁽⁴⁾ To be confirmed following discussions.

⁽⁵⁾ To be confirmed following discussions.

⁽⁶⁾ To be confirmed following discussions.

Mitigation Measure Code	Summary Description	Capital Funding Agency ⁽¹⁾	Implementation Agency	Post-Construction Maintenance Agency ⁽²⁾
MM14.3	Watercourse Impact Mitigation-Enhancement Planting along Embankment	Government/ Private Sector	Contractors of the Government/ Private Sector	LCSD/ AFCD/ DSD ⁽¹⁾
MM14.4	Watercourse Impact Mitigation – Avoid Affecting Watercouses	Government/ Private Sector	Contractors of the Government/ Private Sector	n/a
MM15	Pond Replacement	Government/ Private Sector	Contractors of the Government/ Private Sector	LCSD
MM16	Screen Hoarding	Government/ Private Sector	Contractors of the Government/ Private Sector	n/a
MM17	Light Control	Government/ Private Sector	Contractors of the Government/ Private Sector	n/a

⁽¹⁾ To be confirmed following discussions.

- Minimum Topographical Change (MM1)

To minimise landscape and visual impacts, the footprint and elevation of such elements should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain. Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimize landform changes and land resumption, while also considering visual amenity. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with the surrounding landscape and to mimic the natural contouring and terrain e.g. introduction and continuation of natural features such as spurs and ridges where appropriate, to support assimilation with the hillside setting.

- Detailed Design (Visual) (MM2)

The planning of the revised RODP has considered reducing visual impacts, enhancing visual amenity and keeping visual corridors, as described in **Section 12.5.2**.

The footprint and massing of development components and the works area should also be kept to a practical minimum and the detailed design of development components for construction stage should follow the *Sustainable Building Design Guidelines*.

The form, textures, finishes and colours of the proposed development components should aim to be compatible with the existing surroundings. To improve visual amenity, designs should be aesthetically pleasing and treatment of structures also improve visual amenity. For example natural building materials such as stone and timber, should be considered for architectural features, and light earthy tone colours such as shades of green, shades of grey, shades of brown and off-white should also be considered to reduce the visibility of the development components, including all roadwork, buildings and noise barriers. In addition, the design of structures should consider green roofs where feasible, following guidelines laid out in CIBSE HK Branch's *Technical Guidelines for Green Roof Systems in Hong Kong (2011)* and ArchSD/Urbis *Study on Green Roof Application in Hong Kong (2007)* (Also see MM10).

All barriers, particularly noise barriers but also any barriers proposed for ecological impact mitigation, should be kept to a practical minimum, be designed to integrate as well as possible into the surrounding visual context and be as low as practical to minimise blocking views. Noise barrier design, including vertical, cantilever or curved, and noise enclosures including semi-enclosure and full enclosure, at grade and/ or elevated, should follow the Greening, Landscape and Tree Management Section (GLTM) of the Development Bureau's *Guidelines on Greening of Noise Barriers (April 2012)*.

Construction time frame should also be considered and designs seek to keep it to a practical minimum.

- Open Space Provision (MM3)

In planning the revised RODP, impacts to most open space/ recreational areas have been avoided. To help alleviate loss of open space unavoidably affected by the Project, the principles adopted in the RODP planning ensure that public open space systems are incorporated and also improve landscape and visual amenity. In KTN NDA, the key open spaces are the east-west running Town Park in the town centre and the Fung Kong Shan Park in the northern part of the NDA as well as a riverside promenade along the western side of Sheung Yue River. In FLN NDA, Site C2-8 is proposed as a Central Park and areas along the northern and southern banks of Ng Tung River will be developed into continuous promenades with some Riverside Parks at a number of Sites (e.g. B1-2, B2-1, B2-8, B2-10, D1-2 and D1-3). The public open space within the RODPs will enhance the visual amenity of the area and improve the overall landscape character as well as ensuring no overall loss of open space/ recreational LR.

- Tree Protection & Preservation (MM4)

Existing trees to be retained within the Project Site should be carefully protected during construction. In particular OVTs will be preserved according to *ETWB Technical Circular (Works) No. 29/2004*. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas.

A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.

- Tree Transplantation (MM5)

Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme.

A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 and final locations of transplanted trees should be agreed prior to commencement of the work.

For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, HyD HQ/GN/13

‘Interim Guidelines for Tree Transplanting Works under Highways Department’s Vegetation Maintenance Ambit’ should be referred to.

- Slope Landscaping (MM6)

As mentioned in **Section 12.5.2.1**, site formation has been reduced as far as possible to avoid substantial slope cutting (also see MM1).

Hydroseeding of modified slopes should be done as soon as grading works are completed to prevent erosion and subsequent loss of landscape resources and characters. Woodland tree seedlings and/ or shrubs should be planted where the slope gradient and site conditions allow. In addition, landscape planting should be provided for the retaining structures associated with modified slopes, where conditions allow. All slope landscaping works should comply with *GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes*.

- Compensatory Planting (MM7) (For specific woodland compensatory planting, see MM8)

Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under ETWBTC 3/2006. Based on a very broad brush estimate, 17,000 trees will be affected by the Project of which 30% will be retained/transplanted. Those unavoidably lost will be compensated for by planting within KTN NDA and FLN NDA to the satisfaction of relevant Government departments as outlined above.

In addition, compensatory planting for shrubs should be considered in suitable locations. Native species such as *Melastoma malabathricum*, *Diospyros vaccinioides*, *Gardenia jasminoides*, *Ixora chinensis*, *Ligustrum sinense*, *Litsea rotundifolia*, *Melastoma dodecandrum*, *Atalantia buxifolia*, *Rhodomyrtus tomentosa*, *Rhaphiolepis indica*, and *Rhododendron simsii* are suggested.

The location of compensatory planting is proposed at the potential open areas such as open spaces, amenity areas, open areas of the streetscapes including roadside planting, as well as the open areas within development lots. Should space allow, the woodland compensatory planting areas (see MM8) may also be able to accommodate some standard tree and shrub compensation.

- Woodland Compensatory Planting (MM8)

Specific woodland compensatory planting is proposed for any areas of quality woodland that are unavoidably affected by the Project.⁽¹⁾ The

(1) It should be noted that LR classification of woodland areas will not necessarily follow the ecological classification; LR classification is based principally on the trees whereas ecological classification makes further consideration of flora and fauna and ecological value. For the recreation of woodland such as in this MM8 and as distinct from standard tree compensation, an ecological approach is preferred.

compensatory woodland planting will principally be within habitats of lower value such as upland grassland. The proposed locations are identified, for example, on the foothills of Tai Shek Mo, and on the higher ground of Fung Kong Shan in KTN NDA; along Fanling Bypass; and a small area in the northern FLN NDA, as indicated on the Landscape Mitigation Plans in **Figures 12.15.0-6** for KTN NDA and **12.16.0-5** for FLN NDA (further detailed zoom in Landscape Mitigation Plans are provided in **DP Packages 12A-D**).

The total area allocated for compensatory woodland planting is more than 16 ha. This provision allows in part for the fact that it will take some time for the compensatory planting to achieve the landscape and ecological function and value of the area to be lost. In addition, it allows for the fact that not all of the areas identified for planting will prove to be plantable, by virtue of topography and ground conditions and, especially, because though the areas identified are largely grassland it is inevitable that these areas will already support some patches of trees and shrubs which would be inappropriate for further planting.

The intention of the compensatory woodland will be to recreate areas of quality woodland, not necessarily to compensate for loss of trees on a like for like basis. Native tree species are suggested for planting, including *Ailanthus fordii*, *Bischofia javanica*, *Castanopsis fissa*, *Celtis sinensis*, *Cinnamomum burmannii*, *Cinnamomum camphora*, *Xanthoxylum avicennae*, *Liquidambar formosana*, *Sapium discolor*, *Schefflera heptaphylla* and *Ilex rotunda*. In addition some understory vegetation may be planted including shrubs such as *Atalantia buxifolia*, *Diospyros vaccinioides*, *Gardenia jasminoides*, *Ixora chinensis*, *Ligustrum sinense*, *Litsea rotundifolia*, *Melastoma malabathricum*, *Melastoma dodecandrum*, *Rhodomyrtus tomentosa*, *Rhaphiolepis indica*, and *Rhododendron simsii*.

- Vertical Greening (MM9)

Planting of climbers to grow up vertical surfaces where appropriate (e.g. building edges, piers), to soften hard structures and facilities.

- Green Roof (MM10)

Roof greening where appropriate should be established on proposed buildings to reduce exposure to untreated concrete surfaces and particularly mitigate visual impact to VSRs at high levels. Green roofs can also provide attractive landscaping and greening. CIBSE HK Branch's *Technical Guidelines for Green Roof Systems in Hong Kong (2011)* and ArchSD/Urbis *Study on Green Roof Application in Hong Kong (2007)* should be referred to when considering and developing green roofs. These documents provide further details including information regarding structural loading, design, and maintenance etc. considerations as well as providing information on what types of plants might be suitable.

- Screen Planting (MM11)

Tall screen/buffer trees and shrubs should be planted to screen proposed structures such as roads and buildings. This measure may additionally form part of the compensatory planting and will improve compatibility with the surrounding environment and create a pleasant pedestrian environment.

- Road Greening (MM12)

For viaducts, soft landscaping should be provided to soften the hard, straight edges (for climbers used to cover the vertical, hard surfaces of the piers – see MM9 Vertical Greening) and shade tolerant plants should be planted, where light is insufficient, to improve aesthetic value of areas under viaducts. Both at grade planting and use of elevated planters should be considered for the soft landscaping of viaducts, taking into account the preference to minimise the overall viaduct bulk and integrate architectural forms and textural finishes which improve aesthetics.

At grade road planting should be considered along central dividers and on road islands e.g. in the middle of roundabouts. HQ/GN/15 - Guidelines for Greening Works along Highways should be referred to for greening of highways specifically and Development Bureau TCW No. 2/2013 – Greening on Footbridges and Flyovers for footbridges and flyovers.

(Roadside planting i.e. at the road edge and not in the central divider or road island, is considered part of MM11 Screen Planting and might also be part of MM7 Compensatory Planting or MM5 Tree Transplanting (where the transplanted tree is planted)

- Marsh/Wetland Compensation (MM13)

Direct loss of marsh and wetland areas caused by the Project will be mitigated by compensatory habitat and management in the proposed Long Valley Nature Park (LVNP) where there will be some addition of wetland areas.

Also see ‘MM14 Watercourse Impact Mitigation’ as wetland planting should be provided along the embankments and beds of modified watercourses.

- Watercourse Impact Mitigation (MM14)

Watercourses in the Study Area are broadly categorised into channelized water courses (LR1) and non-channelized or more natural watercourse including natural streams (LR2). During the formulation of the RODP, key features, which include the large channelized rivers of Ng Tung, Shek Sheung, Sheung Yue and Ma Wat channel, as well as areas of natural streams have been actively avoided as far as possible as reported in **Section 12.5.2**; where they cannot be fully avoided, care has been taken to zone the land appropriately to ensure their protection wherever possible. Inevitably, given the nature of the Project, there will be some impacts on watercourses and MM14.1-4 below describe specific measures that can be applied to help mitigate watercourse impacts.

Reprovision of Natural Stream (MM14.1)

Where natural streams are unavoidably affected along some of their length, they can be diverted to avoid the proposed new developments and retain the integrity of the whole stream. Detailed design of any stream diversion should follow the Guidelines in ETWB Technical Circular (Works) No. 5/2005 (Protection of natural streams/rivers from adverse impacts arising from construction works) and appropriate construction methods should be used.

Two short stretches of the Ma Tso Lung Stream will be affected by Project in the KTN NDA; by the LMC Eastern Connection Road on the western border of Site F1-3 and further upstream by Site E-2. At both these locations, the affected stream will be reprovisioned and maintain the flow between unaffected sections of the stream. The reprovisioned stream will be provided with a natural bed and banks, as well as having an area of marsh/ pool next to it and trees and shrubs further from the banks. Full details of this stream mitigation are provided in **Chapter 13**.

Stream Buffer Planting (MM14.2)

Providing a minimum 10 m buffer with planting (where there is a general presumption against any development taking place) along streams where they flow close to developments, confers a degree of protection to the stream course and its associated vegetation.

For the stream at Siu Hang San Tsuen in FLN NDA, changes to the proposed NDA boundary during the revised RODP design have excluded much of this stream from the NDA and within the NDA boundary much of the stream would be located underneath the viaduct for the proposed Fanling Bypass. To the south of the viaduct the stream flows through the area D1-3, zoned as Open Space, prior to joining Ng Tung River. In this Open Space zone a 10m buffer is proposed in which natural vegetation will be retained and enhanced and human activities will be limited in order to avoid direct impacts to the stream bed and to minimise potential indirect impacts to the stream and riparian corridor.

Enhancement Planting along Embankment (MM14.3)

For channelized watercourses, if these are modified, the Drainage Services Department Practice Note No.1/2005 – *Guidelines on Environmental Considerations for River Channel Design*, should be considered and appropriate mitigation measures included ensuring the new watercourses match the existing as far as possible. Measures can include enhancement planting to upgrade the channels as appropriate, including consideration of wetland planting along embankments where appropriate; as well as consideration of the best materials for the channel lining (e.g. gabion). All measures must also ensure any necessary maintenance work can be carried out and that the channel meets all its requirements for water flow, etc.

For example, a stretch of the Ma Wat River Channel in the south of FLN NDA will have to be diverted for the construction of the Fanling Bypass Eastern Section. This measure will be particularly relevant in this area.

Avoid affecting Watercourses (MM14.4)

At the planning stage care has been taken to avoid affecting watercourses as far as possible. In the detailed design, consideration should again be made of watercourses, to minimise any impacts e.g. at new bridge crossings, viaducts, road alignment etc. Guidelines for this include ETWB Technical Circular (Works) No. 5/2005 *Protection of natural streams/rivers from adverse impacts arising from construction works* as well as *Building Department (BD) Practice Note for Authorized Persons and Registered Structural Engineers 295: Protection of natural streams/rivers from adverse impacts arising from construction works*.

For example, the stream at Siu Hang San Tsuen in FLN NDA much of the stream is located underneath the viaduct for the proposed Fanling Bypass. In order to avoid impacts to the stream, the detailed final design of the viaduct should follow guidelines and ensure that no viaduct footings or other structures are placed in the stream.

Bridges and box culverts should also be used to minimise the necessity of watercourse modification and protect the watercourses where necessary.

- Pond Replacement (MM15)

In planning the revised RODP, impacts to most ponds have been avoided by exclusion from the NDA or suitable zoning that allow for the ponds to be protected e.g. Agricultural zoning in A1-3 and A1-9 in the west of FLN NDA. To help alleviate the loss of ponds unavoidably affected by the Project, the principles adopted in the RODP design ensure that new ponds are incorporated and also improve landscape and visual amenity. For example the Fung Kong Shan Park in E1-7 of KTN NDA will incorporate a pond and the requirement of such re-provision has been stipulated in the planning documents for the formulation of the Preliminary Layout Plan (In addition, the LVNP at C1-9 will ensure the retention and possible provision of ponds as reported in MM13).

- Screen Hoarding (MM16)

Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders with public accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used. Any works areas near the ecological sensitive areas should erect 2m high dull green site boundary fence. Details can refer to the ecological impact assessment (Chapter 13 of the EIA report).

- Light Control (MM17)

Construction day and night time lighting should be controlled to minimize glare impact to adjacent VSRs during the construction stage. Street and night time lighting shall also be controlled to minimize glare impact to adjacent VSRs during the operation phase. This is considered a general measure for good practice.

- Other good practise measures.

For areas unavoidably disturbed by the Project on a short term basis e.g. works areas, the general principle to try and restore these to their former state to suit future land use, should be adhered to.

With regard to topsoil, where identified, it should be stripped, treated appropriately, and where suitable and practical stored for re-use in the construction of the soft landscape works such as roadside amenity strips, and open space sites. For the all planting, this should be installed as soon as the areas become available, to achieve early establishment.

12.9.1 Significance of Residual Landscape Impacts upon Mitigation

Mitigation measures, as described in **Section 12.9** above, have been applied to the various impacts and used to calculate the significance of residual impacts for LRs and LCAs. For LRs and LCAs particularly affected by the Project (as summarised after **Tables 12.8.5 and 12.8.6** for KTN and **Tables 12.8.7 and 12.8.8** for FLN), a brief description of how the measures will mitigate the impacts is provided.

The potential significance of residual landscape impacts during the construction and operational phases, after mitigation at day 1 and year 10, is provided in **Tables 12.9.2 and 12.9.3** for KTN and **Tables 12.9.4 and 12.9.5** for FLN respectively.

The assessment follows the methodology proposed in **Section 12.4** and assumes that the appropriate mitigation measures described in **Section 12.9**, and listed in the tables according to LRs/LCAs, would be implemented. The assessment also assumes the full effect of the soft landscape mitigation measures would be fully realized after 10 years.

Figures 12.15.0 (key plan), 12.15.1-6 (zoom ins) and Figures 12.16.0 (key plan), 12.16.1-5 (zoom ins) show the main Landscape Mitigation Plans for the KTN and FLN NDAs respectively, to help illustrate some of the mitigation measures proposed.

12.9.1.1 Kwu Tung North (KTN) NDA

The significance of residual impacts after mitigation on KTN NDA LRs and LCAs are detailed in **Tables 12.9.2 and 12.9.3** below. Brief descriptions of how these measures will mitigate the impacts on the most affected LRs and LCAs is provided after the tables.

Table 12.9.2 – Significance of Residual Impacts Upon Mitigation on KTN NDA LRs

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation (Day 1)	Operation (Year 10)
KLR 1	Channelized Water Course							
KLR-1.1	Ng Tung River (Channelised)	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-1.2	Shek Sheung River (Channelised)	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-1.3	Sheung Yue River (Channelised)	Slight	Insignificant	MM14.3, MM14.4	n/a	Insignificant	Insignificant	Insignificant
KLR-1.4	Water Course Network in Long Valley (Channelised)	Moderate	Moderate	MM14.4	MM14.4	Slight	Slight	Slight
KLR 2	Water Course							
KLR-2.1	Streams in Kwu Tung	Moderate	Moderate	n/a ⁽¹⁾	n/a ⁽²⁾	Moderate	Moderate	Moderate
KLR-2.2	Natural Streams at Tai Shek Mo	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-2.3	Natural Streams at Ki Lun Shan	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-2.4	Natural Streams at Ma Tso Lung	Moderate	Moderate	MM14.1, MM14.2, MM14.3, MM14.4	MM14.1, MM14.2, MM14.3, M14.4	Slight	Slight	Insignificant
KLR 3	Water Pond							
KLR-3.1	Ho Sheung Heung Water Ponds	Moderate	Moderate	MM15	MM13, MM15	Slight	Slight	Insignificant
KLR-3.2	Long Valley Water Ponds	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-3.3	Fung Kong Shan Water Ponds	Substantial	Substantial	MM15	MM13, MM15	Moderate	Moderate	Slight
KLR-3.4	Fu Tei Au Water Ponds	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-3.5	Water Ponds beside Kam Hang Road	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-3.6	Water Ponds at Pak Shek Au	Moderate	Moderate	M15	MM13, MM15	Moderate	Slight	Slight
KLR-3.7	Water Ponds at Tit Hang	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-3.8	Water Ponds within the Closed Area	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-3.9	Kam Tsin Tsuen Pond	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-3.10	Wai Loi Tsuen Water Pond	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR 4	Marsh							
KLR-4.1	Marshes in Long Valley	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-4.2	Mitigation Wetland	Moderate	Moderate	MM13	MM13	Slight	Slight	Insignificant

⁽¹⁾ Further discussion regarding impacts on these streams is provided in the text following the table
⁽²⁾ Further discussion regarding impacts on these streams is provided in the text following the table

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation (Day 1)	Operation (Year 10)
KLR-4.3	Wetland/ Marsh in the Closed Area	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-4.4	Marsh around Pai Tau Lo and Tsung Yeun	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR 5	Plantation							
KLR-5.1	Plantation South of Fanling Highway	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-5.2	Plantation in the Vicinity of Hakka Wai	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-5.3	Plantation in the Vicinity of Wai Loi Tsuen	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-5.4	OVTs along Fanling Highway and Castle Peak Road	Moderate	Moderate	MM4	MM4	Slight	Slight	Insignificant
KLR 6	Hillside Woodland							
KLR-6.1	Ki Lun Shan Hillside Woodland	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-6.2	Tai Shek Mo Hillside Woodland	Moderate	Moderate	MM1, MM4, MM5, MM6, MM7, MM8	MM4, MM5, MM6, MM7, MM8	Slight	Slight	Insignificant
KLR-6.3	Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong	Substantial	Substantial	MM1, MM4, MM5, MM6, MM7, MM8	MM4, MM5, MM6, MM7, MM8	Moderate	Moderate	Slight
KLR-6.4	Ho Sheung Heung Fung Shui Woodland	Moderate	Moderate	MM1, MM4, MM5, MM6, MM7, MM8	MM4, MM5, MM6, MM7, MM8	Slight	Slight	Insignificant
KLR 7	Lowland Woodland							
KLR-7.1	Kwu Tung South Road Lowland Woodland	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-7.2	Lowland Woodland in the Vicinity of Kam Tsin	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-7.3	Lowland Woodland in Pak Shek Au and Tong Kok	Substantial	Substantial	MM1, MM4, MM5, MM6, MM7, MM8, MM12	MM1, MM4, MM5, MM7, MM8, MM12	Moderate	Moderate	Slight
KLR-7.4	Sheung Shui Water Treatment Works Lowland Woodland	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-7.5	Vemon Pass Woodland	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR 8	Shrubland/Grassland Mosaic							
KLR-8.1	Ki Lun Shan Shrubland/ Grassland Mosaic	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-8.2	Fung Kong Shan Shrubland/Grassland Mosaic	Slight	Slight	MM1, MM4, MM5, MM7	MM1, MM4, MM5, MM7	Insignificant	Insignificant	Insignificant
KLR-8.3	Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Range Foothills	Substantial	Substantial	MM1, MM4, MM5, MM6, MM7, MM9, MM10	MM1, MM4, MM5, MM6, MM7, MM9, MM10	Moderate	Moderate	Slight
KLR-8.4	Shrubland/Grassland Mosaic along Sheung Yue River, Ng Tung River and Fanling Highway	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-8.5	Fu Tei Au Shrubland/Grassland Mosaic	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation (Day 1)	Operation (Year 10)
KLR 9	Agricultural Land							
KLR-9.1	Long Valley Agricultural Land	Moderate	Moderate	MM4, MM5, MM7	MM4, MM5, MM7, ⁽¹⁾	Moderate	Moderate	Slight
KLR-9.2	Ho Sheung Heung Agricultural Land	Slight	Slight	MM4, MM5, MM7	MM4, MM5, MM7, ⁽¹⁾	Slight	Slight	Slight
KLR-9.3	Agricultural Lands in Shek Tsai Leng, Tong Kok and Tung Fong	Moderate	Moderate	MM4, MM5, MM7	MM4, MM5, MM7, ⁽¹⁾	Moderate	Moderate	Moderate
KLR-9.4	Other Agricultural Lands in KTN	Moderate	Moderate	MM4, MM5, MM7	MM4, MM5, MM7, ⁽¹⁾	Moderate	Moderate	Moderate
KLR-9.5	Other Orchard Area in KTN	Slight	Slight	MM4, MM5, MM7	MM4, MM5, MM7, ⁽¹⁾	Slight	Slight	Slight
KLR 10	Open Space / Recreational Area							
KLR-10.1	Hong Kong Golf Club	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-10.2	Sheung Shui Community Sports	Substantial	Moderate	MM3, MM4, MM5, MM7	MM3, MM4, MM5, MM7	Moderate	Slight	Insignificant
KLR-10.3	Lo Wu Saddle Club	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR 11	Urban Development Area							
KLR-11.1	Lo Wu Correctional Institution	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-11.2	Existing formation site for proposed Kwu Tung MTRC Station	Slight	Slight	n/a	n/a	Slight	Slight	Insignificant
KLR 12	Rural Development Area							
KLR-12.1	Ho Sheung Heung Rural Development Area	Moderate	Moderate	MM2, MM4, MM5, MM7, MM12	MM4, MM5, MM7, MM12	Slight	Slight	Slight
KLR-12.2	Rural Development Area in Long Valley, Yin Kong Tsung Pak Long and Hakka Wai	Moderate	Moderate	MM2, MM4, MM5, MM7, MM12	MM4, MM5, MM7, MM12	Slight	Slight	Insignificant
KLR-12.3	Rural Development Area in Ngam Pin	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-12.4	Rural Development Area to the East of MTRC East Railway Line	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-12.5	Rural Development Area to the North of Hong Kong Golf Club	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-12.6	Kam Tsin Rural Development Area	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-12.7	Kwu Tung Fresh Water Service Reservoir	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-12.8	Rural Development Area of Europa Garden and Valais	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-12.9	Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang	Moderate	Moderate	MM1, MM2, MM4, MM5, MM7, MM12	MM1, MM4, MM5, MM7, MM12	Moderate	Moderate	Moderate
KLR-12.10	Lo Wu Rifle Range	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-12.11	Rural Development Area in Ma Tso Lung	Slight	Slight	MM1, MM2, MM4, MM5, MM7, MM12	MM1, MM4, MM5, MM7, MM12	Insignificant	Insignificant	Insignificant
KLR-12.12	Fanling Lodge	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant

⁽¹⁾ Further discussion regarding impacts on agricultural land is provided in the text following the table

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation (Day 1)	Operation (Year 10)
KLR 13	Industrial / Open Storage							
KLR-13.1	Sheung Shui Industrial Area	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLR-13.2	Industrial / Open Storage Area in Yin Kong	Slight	Slight beneficial	MM4, MM5, MM7, MM12	MM4, MM5, MM7, MM12	Slight	Slight beneficial	Slight beneficial
KLR-13.3	Industrial/Open Storage in Shek Tsai Leng , Tong Kok and Fung Kong	Slight	Slight beneficial	MM4, MM5, MM7, MM12	MM4, MM5, MM7, MM12	Slight	Slight beneficial	Slight beneficial
KLR-13.4	Industrial/Open Storage in Pak Shek Au, Chau Tau and Foothill of Ki Lun Shan	Slight	Slight beneficial	MM4, MM5, MM7, MM12	MM4, MM5, MM7, MM12	Slight	Slight beneficial	Slight beneficial
KLR 14	Major Transportation Corridor							
KLR-14.1	Fanling Highway and nearby associated roads	Moderate	Moderate	MM2, MM4, MM5, MM7, MM12, MM14.5	MM2, MM4, MM5, MM7, MM12, MM14.5	Slight	Slight	Insignificant
KLR-14.2	MTRC East Rail (to Lo Wu)	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant

As previously stated, LRs particularly affected by the Project at construction before mitigation in KTN NDA, which experience substantial adverse impacts, include four LRs and the mitigation measures for these and their residual impact significances are detailed below. The residual impact for the LRs that are predicted to experience moderate adverse impacts at construction and operation before mitigation are also discussed.

12.9.1.1.1 Substantially Affected LRs Prior to Mitigation

Although the planning of the revised RODP has avoided a number of water ponds, the Fung Kong Shan Water Ponds (KLR-3.3) comprising a relatively large pond area of approximately 1.12 ha and with medium sensitivity will be unavoidably filled during construction of the NDA and remain so at operation and the significance before mitigation is considered to be substantial since all these ponds are lost. Although these ponds are lost, the conservation and enhancement of the LVNP will ensure the retention and provision of some ponds in this area. In addition one principle of planning for the NDA is to incorporate some new ponds, for example there will be a new pond in Fung Kong Shan Park, near their original pond locations. Although this will not directly compensate for the lost ponds, it will alleviate the impact. The requirements of such re-provision have been stipulated in the planning documents for the formulation of the Preliminary Layout Plan. Therefore although these particular ponds at Fung Kong Shan are irreversibly lost, at construction and operation day 1, the residual impact significance is considered to reduce to moderate, and by year 10 when the nearby Fung Kong Shan pond is established and the ponds in the LVNP have had time to confer a positive effect, the residual impact is considered to drop to slight.

Although much of the Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong (KLR-6.3) is on land zoned green belt so it will not be affected, some will be affected by land designated for incompatible uses such as for research and development in support of Lok Ma Chau Loop Development, a fire station cum ambulance depot, a standard swimming pool, residential housing and roads. Woodland in these areas is likely to be adversely impacted with trees being cleared during site clearance and site formation in the construction phase. Measures to protect and preserve trees as well as transplant and actively compensate with woodland plantation, will reduce this impact from substantial to moderate. Since this LR is on hillside, measures to landscape any slopes that are constructed will also help reduce impacts. During operation, the land use in these sites will have changed completely and the effect of the same mitigation measures will ensure the impact remains moderate at day 1 of operation. By year 10 of operation, the compensatory woodland planting is considered to have reached its full effect and the residual impact will reduce to slight.

About 2 ha of the 13.63 ha of Lowland Woodland in Pak Shek Au and Tong Kok (KLR-7.3) that falls within the RODP boundary is on land zoned for compatible uses (e.g. Green Belt) so it will not be affected. The majority of this LR, however, will be affected by such developments as the potential

District Cooling System (DCS), roads and their associated amenity areas, part of a hospital, a public transport interchange, as well as residential and school developments which are all incompatible with the current landscape resources. While parts of the residential development complexes include open spaces between buildings, some trees in this LR will be lost during site clearance and formation works and the DCS construction will require significant landform changes as it is currently located on a small knoll. This large change to an LR considered to be highly sensitive means there is a substantial impact prior to mitigation. Measures to protect and preserve trees, transplant and actively compensate trees with woodland plantation will reduce this impact. Additionally, for the DCS area, minimization of topographical changes in the detailed design stage and landscape treatment of any slopes formed will also reduce the impact. Therefore the residual impact upon mitigation for this LR is considered to reduce from substantial to moderate at day 1 of operation and with the compensatory woodland planting reaching its full potential, to reduce to slight by year 10 of operation.

Most of the Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Range Foothills (KLR-8.3) will not be affected by the Project as it falls either outside the RODP boundary or on green belt. Two sites designated for water service reservoirs, however, are located in this LR and will require considerable site formation with cut/ fill slopes of up to 38 m for the Flushing Water Service Reservoir and up to 53 m for the Fresh Water Service Reservoir, all with a maximum 40 degree slope steepness. The magnitude of change is therefore considered to be large. This LR has medium sensitivity and although the area affected is relatively small (under 4 ha), the impact is considered substantial prior to mitigation, largely due to the topographical changes to two adjacent foothill areas (See **Figures 12.11.6-7**). Design of the reservoirs is not finalised and their final design should consider minimizing changes to the land form and interference with natural terrain. Retaining walls should also be considered as well as cut slopes, to minimize landform changes. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with surrounding landscape and to mimic the natural contouring and terrain. Landscaping of the reservoir roof and the surrounding reservoir structures will also mitigate the impact to the shrubland/ grassland here (no trees will be planted on the roof itself) by creating a green vegetated area rather than hardscape surface. Planting of climbers to grow up vertical surfaces where appropriate could also soften any wall structures. By implementing all these measures as well as taking care to landscape any slopes that are formed and implement protection, preservation, transplantation and compensatory planting for trees, the impact on this LR is considered to reduce to moderate at construction and operation day 1. With soft landscaping maturing and conferring greater mitigation by year 10 of operation, the impact is considered to reduce to slight.

The impact on Sheung Shui Community Sports recreational area (KLR-10.2) is predicted to be substantial at construction but to reduce to moderate at operation prior to mitigation. This drop of impact from construction to

operation is due to some of the land use at operation being compatible with the current LR e.g. a new Standard Swimming Pool and Sports Centre at E1-5 providing a recreational area and creating similar LR value to the NDA. Mitigation measures to protect and preserve the few trees in this LR, as well as transplant any unavoidably affected, or compensate for them, will slightly reduce the impact. Moreover the planning of the revised RODP avoids impacts to most open space/ recreational areas and the principle adopted in the RODP planning ensures that public open space systems are incorporated. In KTN NDA, the key open spaces are the east-west running Town Park in the town centre and the Fung Kong Shan Park in the northern part of the NDA as well as a riverside promenade along the western side of Sheung Yue River. Sports grounds are designated at B2-8, E1-5 and F1-1. The public open space within the RODPs will ensure no overall loss of open space/ recreational LR and will help to mitigate the impact on KLR-10.2. Therefore the significance of impact is considered to reduce to moderate at construction and slight at operation day 1, becoming insignificant by year 10.

12.9.1.1.2 Moderately Affected LRs Prior to Mitigation

The LRs which are predicted to experience moderate adverse impacts at construction before mitigation are elaborated on below.

The Water Course Network in Long Valley (Channelised) (KLR-1.4) is an integral part of the Long Valley Agricultural area and hence has high sensitivity. It is predicted to be moderately affected by the Project. The majority of this LR falls in Site C1-9 designated to become the LVNP and will not be adversely affected by the Project. Where the channels converge and link to an existing box culvert in the south, however, the water course will be diverted into box culverts as the land is designated for commercial, research and development uses. An active management plan for the LVNP in C1-9 is proposed which will generally enhance and protect this area and in so doing, it is likely that this LR passing through C1-9 will be protected. Overall with the diversion of some sections of this LR into box culverts the significance of impact is considered to drop to slight at construction and remain slight throughout operation.

The Streams in Kwu Tung (KLR-2.1) are predicted to be moderately affected by the Project before mitigation. These streams are located in the central area of KTN NDA and pass through villages including Fung Kong, Tung Fong, Tong Kok and Shek Tsai Leng such that while upstream sections are natural and with seasonal flow, some sections are fortified by concrete banks with grey water flowing and they are considered of poor quality and to have medium sensitivity overall. They will be affected by many different development uses including buildings for residential, public rental housing, a primary school and commercial, research & development. Site formation works for these developments means that these streams will be filled and permanently lost at construction. Given the medium sensitivity of this LR and the large magnitude of change experienced, the significance of the impact is considered to be moderate before mitigation. Given the streams are permanently lost the

significance of the impact is considered to remain as moderate, even at year 10 of operation. Nevertheless, in formulating the revised RODP care has been given to preserving the more natural streams within the NDA, such as Ma Tso Lung stream (part of KLR2-4), so that within the whole NDA, key streams are conserved. For Ma Tso Lung stream in particular, which has high sensitivity and is of high ecological value in parts, the upper and middle sections and tributaries have been avoided by zoning the area as Green Belt and a 15-30 m buffer zone (in Site F1-3) to restrict development. The boundary of Site F1-3 has also been adjusted to protect the stream's riparian vegetation. The overall significance of the Project's impact on KLR-2.4 is considered moderate at construction and operation before mitigation. Some short meanders of the stream in Site F1-3 and a section in Site E1-2 will still require diversion to protect the stream during site formation works and the stream diversion will be carefully designed to retain the natural stream bank and bed. At Site F1-3, an area of marsh/ pool is designated next to the stream, with trees and shrubs further from the bank, overall preserving, if not enhancing, these stream sections. Consideration will be made to further reducing any impact on the stream e.g. through fine tuning of the LMC Eastern Connection road alignment and placement of buildings within F1-3. As such, the residual impact is considered to reduce to slight at construction and operation day 1, and become insignificant by year 10 when the buffer planting will have matured to its full potential and the diverted sections of stream be fully established.

Most ponds in the KTN NDA Study area will not be affected by the Project but there are two areas where ponds are considered to be moderately affected before mitigation (i.e. Ho Sheung Heung Water Ponds (KLR3.1) and Water Ponds at Pak Shek Au (KLR-3.6)). The Ho Sheung Heung Water Ponds (KLR-3.1) are rated highly sensitive and most of them will remain in the NDA but one reasonably large and one small pond south of Ho Sheung Heung will be affected by residential and road developments and filled during site formation. This is considered an intermediate change leading to moderate significance of impact before mitigation. The small Water Ponds at Pak Shek Au (KLR-3.6) are rated as having medium sensitivity and will be lost during site formation for a hospital and road resulting in large change and moderate significance of impact before mitigation. Although some of the ponds are lost, the conservation and enhancement of the LVNP will ensure the retention and provision of some ponds in this area. Moreover the layout of the revised RODP incorporates some new ponds, for example a new pond at Fung Kong Shan Park in E1-7. Although this will not directly compensate for the lost ponds, it will alleviate the impact. Therefore although some ponds are irreversibly lost, at construction and operation day 1 the residual impact significance is considered to reduce to slight, and by year 10 when any ponds in the RODP have had time to establish and the enhanced ponds in the LVNP have had time to confer a positive effect, although the impact will have reduced further, the residual impact is still rated slight.

Although most of Mitigation Wetland (KLR-4.2) will not be affected by the Project, this is rated a highly sensitive resource and will experience a moderate change as a small area of it will be irreversibly lost during site formation for amenities and commercial, research and development uses. Some of this LR falls within the LVNP and will be conserved and enhanced therefore ensuring the retention of these mitigation wetland areas and their possible enhancement. Therefore although a particular small area of mitigation wetland is irreversibly lost, at construction and operation day 1, the residual impact significance is considered to reduce to slight, and by year 10 when wetland and some marshes in the LVNP are enhanced and confer a positive effect, the residual impact will be insignificant.

OVTs along Fanling Highway and Castle Peak Road (KLR-5.4) are a highly sensitive resource and although all these trees will be retained, given there is a possibility they may be indirectly affected during construction works along the roads, a worst case scenario is used to conclude they may experience a small change and therefore gives a moderate significance of impact. By ensuring careful tree preservation measures are put in place to protect these trees, they should not be affected by the Project and the significance of residual impact is considered to reduce to slight at construction and operation day 1 and be insignificant by year 10 of operation.

Most of Tai Shek Mo Hillside Woodland (KLR-6.2) is outside the RODP boundary and a small section east of Fung Kong Shan falls within land designated as green belt; woodland here will not be affected by the Project. However, roughly 0.5 ha of this LR lies within a site designated as a potential activities centre where adverse impact by site formation and tree clearance is expected. Woodland in these areas is likely to be adversely impacted during site clearance and site formation in the construction phase. Measures to protect and preserve trees, as well as transplant and actively compensate them with woodland plantation, will reduce this impact. The compensatory woodland planting will principally be within habitats of lower value such as upland grassland and the proposed locations are identified, for example, on the foothills of Tai Shek Mo and on the higher ground of Fung Kong Shan in KTN NDA; along Fanling Bypass; and a small area in the northern FLN NDA, as indicated on the Landscape Mitigation Plans in **Figures 12.15.0-6** for KTN NDA and **12.16.0-5** for FLN NDA. Since this LR is on hillside, measures to landscape any slopes that are constructed will also help reduce impacts. The impact is considered to reduce to slight at construction and operation day 1, and become insignificant by year 10 when the compensatory woodland planting will have matured to its full potential.

The majority of Ho Sheung Heung Fung Shui Woodland (KLR-6.4) will not be affected by the Project as it falls within an area zoned as 'green belt'. Tiny patches on the border of the woodland area may be affected by proposed residential development and a road. Measures to protect and preserve trees as well as transplant and actively compensate them with woodland plantation, will reduce this impact from moderate to slight at construction and day 1 operation. Since this LR is on hillside, measures to landscape any slopes that

are constructed will also help reduce impacts. By year 10 of operation, the compensatory woodland planting is considered to have reached its full effect and the residual impact will reduce to insignificant.

A number of agricultural land LRs are predicted to be moderately affected by the Project, namely Long Valley Agricultural Land (KLR-9.1), Agricultural Lands in Shek Tsai Leng, Tong Kok and Tung Fong (KLR-9.3) and Other Agricultural Lands in KTN (KLR-9.4). Careful planning of the revised RODP means that most of the agricultural land in Long Valley and Ho Sheung Heung will not be affected. Large areas of other agricultural LRs, however, will be affected and permanently lost. There is no direct compensation for the agricultural land lost but mitigation includes the possible preservation and protection of any trees in such LRs and where unavoidably affected, transplantation or compensatory planting which could mitigate the impact very slightly. The loss of agricultural land has been carefully studied for this Project. The setup of the LVNP and preservation and even enhancement of agricultural land in that area, as well as zoning of large sites C2-2 and C1-6 to the north and south of LVNP as agricultural land, is considered to go some way to alleviate impacts on agricultural land. In addition, this broad agricultural land category (LR9) encompasses both existing active and abandoned agricultural land including orchard areas. According to a further review and site inspection in December 2012/January 2013 by PlanD with assistance from AFCD, the amount of active agricultural land affected by the Project in KTN NDA is approximately 4 ha. According to the AFCD Annual Report 2011-2012, currently, there are 4,071 ha of abandoned agricultural land in Hong Kong and 734 ha of active agricultural farmland and as such, the affected agricultural land only represents a small percentage of active agriculture land in Hong Kong. In the surrounding areas of the Project, 160 ha of land have been found potentially suitable for agricultural rehabilitation/re-site in the above mentioned site inspection. The major cluster (34 ha) is found at Kwu Tung South. Since there is no direct mitigation for the loss of agricultural land, the significance of impact on agricultural land in most of these areas will remain the same before and after mitigation. In Long Valley however, since this is the area where the LVNP will be actively managed and the positive effects of this measure conferred best, the impact will reduce to slight by year 10 of operation.

One large Rural Development Area (in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang (KLR-12.9)) and two small Rural Development Areas (around Ho Sheung Heung KLR-12.1, and in Long Valley, Yin Kong, Tsung Pak Long and Hakka Wai KLR-12.2), would experience moderately significant impacts due to the Project. The Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang (KLR-12.9), is a core LR at the centre of KTN NDA with medium sensitivity. The magnitude of change is large due to the large area affected by the Project. Small areas of this LR and will not be affected, such as those falling in Sites designated as 'green belt'. Most of the LR, however, will undergo change to an urban development area with more facilities than previously, such as a swimming pool complex, fire station cum ambulance

depot, schools and residential developments. During construction site formation works at all these sites will cause large changes and at operation, when all the new structures are built, the changes will still be large. At Ho Sheung Heung (KLR-12.1) most of the village will remain unaffected or with compatible land use (e.g. D1-9 for village type development and D1-4 for very low density residential), but just a small area to the south will be developed into part of a denser high rise residential Site (D1-7). In KLR-12.2 it is unlikely this area will be affected by the Project as although it falls within the RODP, land uses are compatible. The Site C1-4 is designated as village type development and a precautionary 'small' magnitude of change has led to this highly sensitive LR having a 'moderate' significance of impact.

The loss of this LR type is inevitable given the nature of the Project to provide new town areas. The need of the Project is explained in **Chapters 1 and 2** and the planning of the RODP and the future detailed design of elements are means by which this impact can be avoided and alleviated e.g. through provision of green corridors and open space spines. There are some trees within this LR and therefore measures to protect and preserve these, as well as transplant any unavoidably affected, or compensate for them, will slightly reduce the impact. Equally the roadside planting, which may form part of the compensatory planting, will also enhance the greenery of the LR and provide the new landscape corridors. Given all these considerations, for both KLR12.1 and KLR12.2 (the smaller affected areas) the residual impact upon mitigation is considered to reduce from moderate to slight at construction and day 1 of operation. As no land use change is envisaged for KLR-12.2, the impact is considered to reduce further to insignificant by year 10 here, whereas at KLR-12.1 it will remain slight. The residual impact upon mitigation for KLR12.9 is considered to remain at a moderate rating throughout the Project.

Fanling Highway and nearby associate roads (KLR-14.1) is considered to undergo intermediate change, largely due to the impacts on its associated roadside planting and channels. Implementing measures to protect and preserve trees as well as transplant and actively compensate them will reduce this impact. In addition, since there will be a number of noise barriers along these roads, measures to design these sensitively and provide vertical greening, as well as provide roadside greening will also mitigate the impacts to this LR. Therefore the significance of the impact is considered to drop to slight at construction and operation day 1 and be insignificant by year 10 when soft landscaping measures will have had time to mature and confer their full effect.

A number of LRs will not be affected by the Project, and for remaining LRs which are affected, slightly adverse or insignificant residual impacts are predicted by day 1 of operation (continuing to be insignificant throughout operation), but with the proper implementation of the suggested mitigation measures. The exception to this is for the industrial/ open storage LRs which will experience benefits due to the Project; many of these areas that are of poor quality will be transformed into well planned developments of higher quality with amenity planting e.g. residential areas or potential activity centres. Impacts on the existing formation site for proposed Kwu Tung MTRC Station

(KLR-11.2) are rated slight as magnitude of change is considered small rather than negligible due to very small parts of the LR at its periphery being affected by the surrounding new developments. In reality most of this LR will remain unaffected, and even without mitigation, the impact will be insignificant by year 10 of operation.

Table 12.9.3 – Significance of Residual Impacts Upon Mitigation on KTN NDA LCAs

LCA Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation (Day 1)	Operation (Year 10)
KLCA-1	Natural Hillside Landscape	Substantial	Substantial	MM1, MM4, MM5, MM6, MM7, MM8, MM12	MM1, MM4, MM5, MM6, MM7, MM8, MM12	Moderate	Slight	Slight
KLCA-2	Rural and Urban Peripheral Village Landscape	Moderate	Moderate	MM1,MM2, MM4, MM5, MM7, MM6, MM8, MM11, MM12	MM1, MM2, MM4, MM5, MM7, MM6, MM8, MM11, MM12	Moderate	Moderate	Moderate
KLCA-3	Urban Development Landscape	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
KLCA-4	Industrial Landscape	Slight	Slight beneficial	MM4, MM5, MM7, MM10, MM11, MM12	MM4, MM5, MM7, MM10, MM11, MM12	Slight	Slight beneficial	Slight beneficial
KLCA-5	Lowland Agricultural Landscape	Moderate	Moderate	MM4, MM5, MM7, MM11, MM13, MM15	MM4, MM5, MM7, MM11, MM13, MM15 ⁽¹⁾	Moderate	Moderate	Moderate
KLCA-6	Major Transportation Corridor Landscape	Moderate	Moderate	MM4, MM5, MM7, MM9, MM10, MM11, MM12, MM14.4	MM4, MM5, MM7, MM9, MM10, MM11, MM12, MM14.4	Slight	Slight	Insignificant
KLCA-7	Major Water Course Corridor Landscape	Slight	Slight	MM4, MM11, MM14.3, MM14.4	MM4, MM11, MM14.3, MM14.4	Insignificant	Insignificant	Insignificant

⁽¹⁾ Further discussion regarding impacts on agricultural land is provided in the text following the table

12.9.1.1.3 LCA Impact Ratings Prior to Mitigation

Before the implementation of mitigation measures, substantially adverse impacts are predicted at construction and operation for Natural Hillside Landscape (KLCA-1).

Due to large topographical changes (**Figure 12.11.5**) for the construction of the water service reservoirs in this Natural Hillside Landscape (KLCA-1), even though the impacted area is relatively small, the LCA will experience intermediate magnitude of change. This LCA has high sensitivity and hence the impact significance is substantial. Design of the reservoirs is not finalised and their final design should consider minimizing changes to the land form and interference with natural terrain. Retaining walls should also be considered as well as cut slopes, to minimize landform changes. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with surrounding landscape and to mimic the natural contouring and terrain. Landscaping of the reservoir roof and the surrounding reservoir structures will also mitigate the impact to this LCA by creating a green vegetated area rather than hardscape surface. Planting of climbers to grow up vertical surfaces, where appropriate, could also soften any wall structures. By implementing all these measures as well as taking care to landscape any slopes that are formed and implement protection, preservation, transplantation and compensatory planting for trees, the impact on this LCA is considered to reduce to moderate at construction and slight at day 1 operation when soft landscape is in place. Although the soft landscaping measures will have matured and the impact be reduced further, it is not considered sufficient to be rated insignificant by year 10 of operation and therefore the residual impacts at this time remain slight.

For the Rural and Urban Peripheral Village Landscape (KLCA-2) over 30 ha of land in this LCA will be affected by sites designated for land use that is not compatible with the current LCA (e.g. high rise public rental housing, high density residential developments, comprehensive development areas, and recreational activity buildings including a swimming pool complex). This changes the area from a general rural/ urban peripheral village landscape to an urban landscape giving a large magnitude of change. This LCA has medium sensitivity, and the Project avoids affecting historic buildings and key areas such as Ho Sheung Heung and Ying Kong, so the impact significance before mitigation is moderate. The change to this LCA is inevitable given the nature of the Project to provide new town areas. The need of the Project is explained in **Chapters 1 and 2** and the planning of the RODP and the future detailed design of elements are means by which this impact can be avoided and alleviated e.g. through provision of green corridors, consideration of green roofs, provision of adequate space for soft landscaping in developments and alongside roads, careful selection of form, textures and finish colours. There are some trees within this LCA and therefore measures to protect and preserve them, as well as transplant any unavoidably affected trees, or compensate for them (including in woodland areas), will slightly reduce the

impact. Part of the compensatory planting and road greening may also serve as screen planting, but any additional screen planting will also add to the general green nature of the LCA and help alleviate the impact. Although the impact is alleviated, the residual impacts are predicted to remain moderate throughout the construction and operation of the Project.

The Lowland Agricultural Landscape in this area (KLCA-5) is predicted to be moderately affected by the Project before any mitigation measures. Careful planning of the revised RODP means much of the agricultural land in this area, particularly in Long Valley and around Ho Sheung Heung will not be affected but other areas of agricultural will inevitably be affected and permanently lost.

There is no direct compensation for the loss of agricultural land but mitigation includes the possible preservation and protection of any trees and where unavoidably affected, transplantation or compensatory planting, which could mitigate the impact very slightly. The loss of agricultural land has been carefully studied for this Project. The setup of the LVNP and preservation and even enhancement of agricultural land in that area, as well as zoning of large sites C2-2 and C1-6 to the north and south of LVNP as agricultural land, is considered to go some way to alleviate impacts on agricultural land. By year 10 of operation the actively managed LVNP will confer some positive impact on this LCA. In addition, this LCA encompasses both active and abandoned agricultural land including orchard areas. According to a further review and site inspection in December 2012/January 2013 by PlanD with assistance from AFCD, in the surrounding areas of the Project, 160 ha of land have been found to be potentially suitable for agricultural rehabilitation/re-site. The major cluster (34 ha) is found at Kwu Tung South. Since there is no direct mitigation for the loss of agricultural land, however, the significance of impact on this LCA will remain the same before and after mitigation and therefore the impact will remain moderate throughout the construction and operation of the Project. Despite this, it is notable that a large area of this LCA in the eastern portions of the NDA, where it is associated with the Long Valley Ecological Area, will not be changed by the Project.

Transportation Corridor Landscape (KLCA-6) is also moderately affected by the Project prior to mitigation, largely due to impacts on Fanling Highway and nearby associate roads (KLR-14.1), particularly the potential loss of roadside planting. Implementing measures to protect and preserve trees as well as transplant and actively compensate them will reduce this impact. In addition, since there will be a number of noise barriers along roads, measures to design these sensitively and provide vertical greening, as well as provide roadside greening will also mitigate the impacts to this LR. Therefore the significance of the impact is considered to drop to slight at construction and operation day 1 and be insignificant by year 10 when soft landscaping measures will have had time to mature and confer their full effect.

Residual impacts at construction and operation are predicted to be insignificant for the other LCAs in this area, namely Urban Development Landscape (KLCA-3), and Major Water Course Corridor Landscape (KLCA-7). The exception is the Industrial Landscape (KLCA-4) which is considered to

experience a slight beneficial impact through the change from low quality open storage landscape to higher quality residential and commercial uses.

12.9.1.2 Fanling North (FLN) NDA

The significance of residual impacts on FLN NDA LR and LCAs are detailed in **Tables 12.9.4 and 12.9.5** below. Brief descriptions of how these measures will mitigate the impacts on the most affected LR and LCAs are provided after the tables.

Table 12.9.4- Significance of Residual Impacts Upon Mitigation on FLN NDA LRs

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation (Day 1)	Operation (Year 10)
FLR 1	Channelized Water Course							
FLR-1.1	Ng Tung River (Fanling District) (Channelized)	Slight	Slight	MM14.3, MM14.4	MM14.3 , MM14.4	Insignificant	Insignificant	Insignificant
FLR-1.2	Shek Sheung River (Channelized)	Slight	Slight	MM14.3, MM14.4	MM14.3, MM14.4	Insignificant	Insignificant	Insignificant
FLR-1.3	Sheung Yue River (Channelized)	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-1.4	Ma Wat River (Channelized)	Substantial	Moderate	MM4, MM5, MM7, MM14.3	MM4, MM5, MM7, MM14.3	Moderate	Moderate	Slight
FLR-1.5	Water Course through Ma Shi Po Agricultural Land (Channelized)	Moderate	Moderate	n/a ⁽¹⁾	n/a ⁽²⁾	Moderate	Moderate	Moderate
FLR 2	Water Course							
FLR-2.1	Natural Stream in Tin Ping Shan Agricultural Land	Moderate	Moderate	n/a ⁽³⁾	n/a ⁽⁴⁾	Moderate	Moderate	Moderate
FLR-2.2	Natural Stream at Cham Shan and Wa Shan	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-2.3	Natural Streams at Lung Shan	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-2.4	Natural Streams at Siu Hang San Tsuen	Moderate	Moderate	MM14.2, MM14.3, MM14.4	MM14.2, M14.3, MM14.4	Slight	Slight	Insignificant
FLR 3	Water Pond							
FLR-3.1	Ho Sheung Heung and Long Valley Water Ponds	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-3.2	Water Ponds within the Closed Area	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-3.3	Fu Tei Au Water Ponds	Slight	Slight	MM13, MM15	MM13, MM15	Slight	Insignificant	Insignificant
FLR-3.4	Water Ponds in Eastern Rural Area	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-3.5	Wai Loi Tsuen Water Pond	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR 4	Marsh							
FLR-4.1	Marshes in Long Valley	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant/	Insignificant
FLR-4.2	Mitigation Wetland	Substantial	Substantial	MM13	MM13	Moderate	Moderate	Moderate

⁽¹⁾ Further discussion regarding impacts on these streams is provided in the text following the table
⁽²⁾ Further discussion regarding impacts on these streams is provided in the text following the table
⁽³⁾ Further discussion regarding impacts on these streams is provided in the text following the table
⁽⁴⁾ Further discussion regarding impacts on these streams is provided in the text following the table

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation (Day 1)	Operation (Year 10)
FLR 5	Plantation							
FLR-5.1	Plantation in the Vicinity of Wai Loi Tsuen	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-5.2	Ha Pak Tsuen Plantation	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-5.3	Plantation in the Vicinity of On Kwok Villa and Noble Hill	Slight	Slight	MM4, MM5, MM7	MM4, MM5, MM7	Slight	Insignificant	Insignificant
FLR 6	Hillside Woodland							
FLR-6.1	Sheung Shui Water Treatment Works Hillside Woodland	Moderate	Moderate	MM1, MM4, MM5, MM6, MM7, MM8	MM1, MM4, MM5, MM6, MM7, MM8	Slight	Slight	Insignificant
FLR-6.2	Cham Shan and Wa Shan Hillside Woodland	Substantial	Substantial	MM1, MM4, MM5, MM6, MM7, MM8	MM1, MM4, MM5, MM6, MM7, MM8	Moderate	Slight	Slight
FLR-6.3	Ma Wat Wai Hillside Woodland	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-6.4	Hillside Woodland at Lung Shan and Wa Mei Shan	Moderate	Moderate	MM1, MM4, MM5, MM6, MM7, MM8	MM1, MM4, MM5, MM6, MM7, MM8	Slight	Slight	Insignificant
FLR 7	Lowland Woodland							
FLR-7.1	Vernon Pass Woodland	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-7.2	Lowland Woodland at Fu Tei Au and Sheung Shui Water Treatment Works	Moderate	Moderate	MM4, MM5, MM6, MM7, MM8	MM4, MM5, MM6, MM7, MM8	Moderate	Slight	Slight
FLR-7.3	Hung Kiu San Tsuen Lowland Woodland	Slight	Slight	MM4, MM5, MM7, MM8	MM4, MM5, MM7, MM8	Slight	Insignificant	Insignificant
FLR-7.4	Sacred Hill Lowland Woodland	Moderate	Moderate	MM4, MM5, MM7, MM8	MM4, MM5, MM7, MM8	Moderate	Slight	Slight
FLR-7.5	Ling Hill and Ling Shan Tsuen Lowland Woodland	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR 8	Shrubland/Grassland Mosaic							
FLR-8.1	Shrubland/Grassland Mosaic along Sheung Yue River and Ng Tung River	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-8.2	Fu Tei Au Shrubland/Grassland Mosaic	Slight	Slight	MM4, MM5, MM7	MM4, MM5, MM7	Insignificant	Insignificant	Insignificant
FLR-8.3	Shrubland/Grassland Mosaic at Cham Shan and Wa Shan	Moderate	Moderate	MM1, MM4, MM5, MM6, MM7, MM9, MM10	MM1, MM4, MM5, MM6, MM7, MM9, MM10	Slight	Slight	Insignificant
FLR-8.4	Shrubland/Grassland Mosaic at Lung Shan	Substantial	Substantial	MM1, MM4, MM5, MM6, MM7, MM9, MM10	MM1, MM4, MM5, MM6, MM7, MM9, MM10	Moderate	Slight	Slight

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation (Day 1)	Operation (Year 10)
FLR 9	Agricultural Land							
FLR-9.1	Agricultural Land in Ho Sheung Heung and Long Valley	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-9.2	Fu Tei Au Agricultural Land	Moderate	Moderate	MM4, MM5, MM7	MM4, MM5, MM7, ⁽¹⁾	Moderate	Moderate	Moderate
FLR-9.3	Agricultural Land between Ng Tung River and Shek Sheung River	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-9.4	Tin Ping Shan Tsuen Agricultural Land	Moderate	Moderate	MM4, MM5, MM7	MM4, MM5, MM7, ⁽²⁾	Moderate	Moderate	Moderate
FLR-9.5	Agricultural Land at Sheung Shui Wa Shan	Moderate	Moderate	MM4, MM5, MM7	MM4, MM5, MM7, ⁽³⁾	Moderate	Moderate	Moderate
FLR-9.6	Agricultural Land in Wu Nga Lok Yueng, Siu Hang San Tsuen, Siu Hang Tsuen and Lung Yeuk Tau	Moderate	Moderate	MM4, MM5, MM7	MM4, MM5, MM7, ⁽⁴⁾	Moderate	Moderate	Moderate
FLR-9.7	Agricultural Land in South of Sha Tau Kok Road	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR 10	Open Space / Recreational Area							
FLR-10.1	North District Sports Ground	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR 11	Urban Development Area							
FLR-11.1	Lo Wu Correctional Institution	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-11.2	Sheung Shui Urban Development Area	Slight	Insignificant	MM2	n/a	Slight	Insignificant	Insignificant
FLR-11.3	Fanling Urban Development Area	Slight	Insignificant	MM2	n/a	Slight	Insignificant	Insignificant
FLR 12	Rural Development Area							
FLR-12.1	Rural Development Area in Ngam Pin	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-12.2	Rural Development Area in the Vicinity of Fu Tei Au	Slight	Slight	MM4, MM5, MM7, MM12	MM4, MM5, MM7, MM12	Insignificant	Insignificant	Insignificant
FLR-12.3	Rural Development Area in the North of FLN NDA	Moderate	Moderate	MM1, MM4, MM5, MM6, MM7, MM9, MM10, MM12	MM1, MM4, MM5, MM6, MM7, MM9, MM10, MM12	Moderate	Slight	Slight
FLR-12.4	Rural Development Area in Sheung Shui Lowland Area	Slight	Slight	MM12	MM12	Slight	Slight	Insignificant
FLR-12.5	Wa Shan Rural Development Area	Slight	Slight	MM4, MM5, MM7, MM12	MM4, MM5, MM7, MM12	Insignificant	Insignificant	Insignificant
FLR-12.6	Lung Yeuk Tau Rural Development Area	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-12.7	Rural Development Area at Wo Hop Shek and Lung Shan	Slight	Insignificant	MM4, MM5, MM7	n/a	Insignificant	Insignificant	Insignificant
FLR-12.8	Rural Development Area around Ma Shi Po	Moderate	Moderate	MM4, MM5, MM7, MM12	MM4, MM5, MM7, MM12	Moderate	Moderate	Moderate

⁽¹⁾ Further discussion regarding impacts on agricultural land is provided in the text following the table

⁽²⁾ Further discussion regarding impacts on agricultural land is provided in the text following the table

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⁽⁴⁾ Further discussion regarding impacts on agricultural land is provided in the text following the table

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation (Day 1)	Operation (Year 10)
FLR-12.9	Wu Nga Lok Yeung and Ling Shan Tsuen Rural Development Area	Slight	Slight	MM4, MM5, MM7, MM12	MM4, MM5, MM7, MM12	Insignificant	Insignificant	Insignificant
FLR 13	Industrial / Open Storage							
FLR-13.1	Sheung Shui Industrial/Open Storage Area	Slight	Slight beneficial	MM4, MM5, MM7, MM12	MM4, MM5, MM7, MM12	Insignificant	Slight beneficial	Slight beneficial
FLR-13.2	Fanling Industrial Area	Slight beneficial	Moderate beneficial	MM4, MM5, MM7, MM12	MM4, MM5, MM7, MM12	Slight beneficial	Moderate beneficial	Moderate beneficial
FLR 14	Major Transportation Corridor							
FLR-14.1	MTRC East Rail	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-14.2	Sha Tau Kok Road (Lung Yeuk Tau)	Slight	Slight	MM4, MM5, MM7, MM12	MM4, MM5, MM7, MM12	Insignificant	Insignificant	Insignificant
FLR-14.3	Fanling Highway	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
FLR-14.4	MTRC near Fanling Highway	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant

LRs particularly affected by the Project at construction before mitigation in FLN NDA, which experience substantial adverse impacts, include three LR and the mitigation measures for these and their residual impact significances are detailed below. The residual impact for some of the LR that are predicted to experience moderate adverse impacts at construction and operation before mitigation are also discussed.

12.9.1.2.1 Substantially Affected LR Prior to Mitigation

The Ma Wat River (Channelized) (FLR-1.4) is predicted to be substantially affected by the Project before mitigation during construction and moderately so during operation, largely due to the fact that it will be diverted to allow for the construction of the Fanling Bypass Eastern Section (DP10), but will remain as a channelized river i.e. retain the same land use. The Drainage Services Department Practice Note No.1/2005 – *Guidelines on Environmental Considerations for River Channel Design*, should be considered at the detailed design of the new river channel to ensure it matches the existing as far as possible as well as implementing enhancement planting along the new channel including the consideration of wetland planting along embankments where appropriate. The most appropriate materials for the channel lining should also be considered (e.g. gabion). Given these measures, the significance of impact is considered to reduce from substantial to moderate at construction and although the impact will have been partly mitigated at day 1 of operation, it is still considered to be moderate. By year 10 of operation, it will have reduced to slight. Full details of impact and mitigation can be found in **DP Package 12D**.

Planning of the revised RODP has taken care to place much of the Mitigation Wetland in FLN NDA (FLR-4.2). Nevertheless, it is estimated that at worst just under half this LR will be adversely affected by the Project where the Sites are designated for incompatible uses such as a police facility or residential uses etc. Although the absolute area potentially lost is under 3 ha, this is a highly sensitive resource and not widely common, so this is considered to be a large change and the significance of the impact on this LR before mitigation is substantial. Setting up of the LVNP will help mitigate the impact. This LVNP will be under management and the land there, including marsh and wetland areas, will be enhanced, with a slight increase in wetland areas. Therefore although some mitigation wetland is irreversibly lost in FLN NDA, considering the LVNP enhancement, at construction and operation day 1, the residual impact significance is considered to reduce to moderate. By year 10 when wetland and some marshes in the LVNP confer their full positive effect, the residual impact will have reduced further, but is still considered to be moderate.

Although a relatively small area of Cham Shan and Wa Shan Hillside Woodland (FLR-6.2) is affected by the Project, the change caused is considered large principally due to the number of trees that may be adversely affected. Since the sensitivity of this LR is high, the significance of impact is substantial at construction and operation prior to mitigation. Measures to

protect and preserve trees as well as transplant and actively compensated trees, including with woodland plantation, will reduce this impact from substantial to moderate. Since this LR is on hillside, measures to landscape any slopes that are constructed will also help reduce impacts. During operation, the land use will have changed but given the area affected is small and with the implementation of the same mitigation measures the impact will be slight at day 1 of operation. By year 10 of operation, the compensatory woodland planting is considered to have reached its full effect and although the residual impact will have reduced further, it is still considered to be a slight impact.

A very small area (under 1.5 ha) of Shrubland/Grassland Mosaic at Lung Shan (FLR-8.4) will be affected by the Fanling North Flushing Water Services Reservoir in the southeast of the NDA and experience site formation changes as a result of the reservoir construction. Site formation is required with cut/ fill slopes of up to 62 m for the reservoir, reducing to an exposed slope of up to 56 m at completion as some of the slope will be covered by the reservoir. Although the area affected is relatively small and final land topography similar to existing (See **Figure 12.12.7**), the magnitude of change is considered to be large. This LR has medium sensitivity and the impact is substantial prior to mitigation, mainly due to the landform changes (also see **Figure 12.12.9**). Design of the reservoirs is not finalised and their final design should consider minimizing changes to the land form and interference with natural terrain. Retaining walls should also be considered as well as cut slopes, to minimize landform changes. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with surrounding landscape and to mimic the natural contouring and terrain. Landscaping of the reservoir roof and the surrounding reservoir structures will also help to mitigate the impact to the shrubland/ grassland here (no trees will be planted on the roof itself) by creating a green vegetated area rather than hardscape surface. Planting of climbers to grow up vertical surfaces where appropriate could also soften any wall structures. By implementing all these measures as well as taking care to landscape any slopes that are formed and implement protection, preservation, transplantation and compensatory planting for trees, the impact on this LR is considered to reduce to moderate at construction and slight at operation day 1 (the topography will be similar to the existing as there is a steep slope in this area already, as shown in **Figure 12.12.7**). Although soft landscaping will mature and confer greater mitigation by year 10 of operation, the impact is considered to remain as slight by year 10.

12.9.1.2.2 Moderately Affected LRs Prior to Mitigation

The LRs which are predicted to experience moderate adverse impacts at construction before mitigation are elaborated on below.

The Water Course through Ma Shi Po Agricultural Land (Channelized) (FLR-1.5) although it is only of medium sensitivity, will be totally lost prior to mitigation and therefore suffer moderate impact. Given this watercourse is permanently lost, and will not be reprovisioned (only a drainage system will be

provided) the significance of the impact is not considered to reduce and therefore will remain as moderate, even at year 10 of operation.

The Natural Stream in Tin Ping Shan Agricultural Land (FLR-2.1) is predicted to be unavoidably affected by the Project, filled and permanently lost, hence undergoing large change. This stream, however, largely flows through developed areas and is near an open storage area. It has become degraded by pollution as well as having banks in some sections fortified with concrete. Therefore the stream has medium sensitivity and the significance of impact is considered moderate before mitigation. The residual impact on this particular stream cannot be directly mitigated and therefore the significance of impact will remain moderate

The Natural Streams at Siu Hang San Tsuen (FLR-2.4) will suffer a small change due to the Project (where it flows under the Fanling Bypass Eastern Section) and given this LR has high sensitivity, this is considered a moderately significant impact. The affected stream at Siu Hang San Tsuen in FLN NDA, has largely been protected by changes to the proposed NDA boundary during the planning of the revised RODP with much of this stream excluded from the NDA. However the stretch of this stream within the NDA boundary would be located underneath the viaduct for the proposed Fanling Bypass Eastern Section. To the south of the viaduct the stream flows through the area D1-3, zoned as Open Space, prior to joining Ng Tung River. In this Open Space Zone a 10m buffer is proposed in which natural vegetation will be retained and enhanced and human activities will be limited in order to avoid direct impacts to the stream bed and to minimise potential indirect impacts to the stream and riparian corridor. At detailed design, in order to avoid impacts to the stream, the detailed final design of the viaduct should follow guidelines such as ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/ivers from adverse impacts arising from construction works as well as Building Department (BD) Practice Note for Authorized Persons and Registered Structural Engineers 295: Protection of natural streams/ivers from adverse impacts arising from construction works. This will ensure that no viaduct footings or other structures are places in the stream and overall the impact is considered to reduce to slight at construction and operation day 1, becoming insignificant by year 10 of operation.

Only a very small area (under 0.5ha) of Sheung Shui Water Treatment Works Hillside Woodland (FLR-6.1) and even smaller area of Hillside Woodland at Lung Shan and Wa Mei Shan (FLR-6.4) are adversely affected by the Project and there is potential loss of trees in these areas leading to a small change to the LRs. Given these LRs are considered highly sensitive, the significance of the impact before mitigation is moderate. Woodland in these areas is most likely to be adversely impacted during site clearance and site formation in the construction phase and measures to protect and preserve trees, as well as transplant and actively compensate them with woodland plantation, will reduce this impact. Since this LR is on hillside, measures to landscape any slopes that are constructed will also help reduce impacts. The impact is considered to reduce to slight at construction and operation day 1, and become

insignificant by year 10 when the compensatory woodland planting will have matured to its full potential.

Two lowland woodland LRs are considered the experience moderately significant adverse impacts due to the Project; the Lowland Woodland at Fu Tei Au and Sheung Shui Water Treatment Works (FLR-7.2) where under 2 ha of the LR is adversely affected, and the Sacred Hill Lowland Woodland (FLR-7.4), where just over 1 ha is adversely affected, due to incompatible land uses, including a police driving and traffic complex, residential and educational developments etc. Measures to protect and preserve trees, transplant and actively compensate trees, including with woodland plantation, will reduce this impact and the residual impact upon mitigation for these LRs is considered to reduce to slight at day 1 operation. With the compensatory woodland planting reaching its full potential by year 10 of operation, the impact will reduce further but the significance is still considered to be slight.

A very small area (under 1 ha) of Shrubland/Grassland Mosaic at Cham Shan and Wa Shan (FLR-8.3) will be affected by part of the Fanling North Fresh Water Services Reservoir in the north of the NDA and its access road. This LR will experience site formation changes as a result of the construction of the reservoir and access road. The reservoir requires site formation with cut/fill slopes of up to 24 m, reducing to an exposed slope of up to 18 m at completion. Although the area affected is relatively very small, the magnitude of change is considered intermediate given the landform changes (See **Figures 12.12.6 and 12.12.8**). This LR has medium sensitivity and prior to mitigation the impact significance is moderate at construction and operation. Design of the reservoirs is not finalised and their final design should consider minimizing changes to the land form and interference with natural terrain. Retaining walls should also be considered as well as cut slopes, to minimize landform changes for the road and reservoir construction. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with surrounding landscape and to mimic the natural contouring and terrain. Landscaping of the reservoir roof and the surrounding reservoir structures will also help to mitigate the impact to the shrubland/ grassland here (no trees will be planted on the roof itself) by creating a green vegetated area rather than hardscape surface. Planting of climbers to grow up vertical surfaces where appropriate could also soften any wall structures. By implementing all these measures as well as taking care to landscape any slopes that are formed and implement protection, preservation, transplantation and compensatory planting for trees, the impact on this LR is considered to reduce to slight at construction and operation day 1. With soft landscaping maturing and conferring greater mitigation by year 10 of operation, the impact is considered to reduce to insignificant by year 10.

A number of agricultural land LRs are predicted to be moderately affected by the Project, with large changes in Fu Tei Au Agricultural Land (FLR-9.2), Tin Ping Shan Tsuen Agricultural Land (FLR-9.4) and Agricultural Land in Wu Nga Lok Yeung, Siu Hang San Tsuen, Siu Hang Tsuen and Lung Yeuk Tau (FLR-9.6), and an intermediate change in Agricultural Land at Sheung Shui Wa

Shan (FLR-9.5) mainly due to the small area affected. Careful planning of the revised RODP means large areas at Sites A1-3 and A1-9 to the northwest of the NDA are designated to remain as agricultural land but in other areas of this LR in FLR-9.2, FLR-9.4, FLR-9.6 and FLR-9.5, agricultural land will be irreversibly lost. There is no direct compensation for the agricultural land lost but mitigation includes the possible preservation and protection of any trees in such LRs and where unavoidably affected, transplantation or compensatory planting which will only mitigate the impact very slightly. The loss of agricultural land has been carefully studied for this Project. The setup of the LVNP is a key component of the Project with preservation and even enhancement of agricultural land in that area, and considered to go some way to alleviate impacts on agricultural land. In addition, this broad agricultural land category (LR9) encompasses both existing active and abandoned agricultural land including orchard areas. According to a further review and site inspection in December 2012/January 2013 by PlanD with assistance from AFCD, the amount of active agricultural land affected by the Project in FLN NDA is approximately 24 ha. According to the AFCD Annual Report 2011-2012, currently, there are 4,071 ha of abandoned agricultural land in Hong Kong and 734 ha of active agricultural farmland and as such, the affected agricultural land represents a small percentage of active agriculture land in Hong Kong. In the surrounding areas of the Project, 160 ha of land have been found potentially suitable for agricultural rehabilitation/re-site in the above mentioned site inspection. The major cluster (34 ha) is found at Kwu Tung South. Since there is no direct mitigation for the loss of agricultural land, the significance of impact on agricultural land in these LRs will remain the same before and after mitigation and therefore the impact will remain moderate throughout.

Rural Development Areas in the North of FLN NDA (FLR-12.3) and around Ma Shi Po (FLR-12.8) are moderately affected by the Project prior to mitigation. A small area of FLR-12.3 will be affected by site A3-1, which is proposed as the Fanling North Fresh Water Service Reservoir, and its access road. The LR here is mainly composed of the existing Firing Range with Fresh Water Service reservoir underneath and its access road, and has undergone some site formation already for the construction of these structures. The proposed highest cut/ fill slopes for the new developments will be 24 m with a maximum 40 degree angle for all slopes and the exposed slope at completion will be up to 18 m high. There will therefore be some topography changes in this area as **Figures 12.12.6 and 12.12.8** help illustrate and despite the area affected being small, the magnitude of change is considered to be intermediate at construction and operation prior to mitigation. This LR has medium sensitivity so the impacts significance is moderate. Design of the reservoir is not finalised and the final design should consider minimizing changes to the land form and interference with natural terrain. Retaining walls should also be considered as well as cut slopes, to minimize landform changes. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with surrounding landscape and to mimic the natural contouring and terrain. Landscaping of the reservoir roof (no trees will be planted on the roof itself), the surrounding reservoir structures and the access

road will also mitigate the impact thereby creating a green vegetated area rather than hardscape surface. Planting of climbers to grow up vertical surfaces where appropriate could also soften any wall structures. By implementing all these measures as well as taking care to landscape any slopes that are formed and implement protection, preservation, transplantation and compensatory planting for trees, the impact on this LR is considered to reduce to slight by operation day 1. By year 10 of operation, when all mitigation measures will have matured and confer their full effect, the impact is considered to reduce further, but still be rated slight.

All the Rural Development Area around Ma Shi Po (FLR-12.8) falls within the RODP boundary and will be affected by the Project that are largely incompatible with this LR, such as buildings for government uses, general clinic/ health centre, residential developments, schools and road. This LR has medium sensitivity and the area of this LR lost is approximately 13 ha. Overall the significance of the impact is considered to be moderate before mitigation. The loss of this LR is inevitable given the nature of the Project to provide new town areas. The need of the Project is explained in **Chapters 1 and 2** and the planning of the revised RODP and the future detailed design of elements are means by which this impact can be avoided and alleviated e.g. through provision of green corridors. There are some trees within this LR and therefore measures to protect and preserve these, as well as transplant any unavoidably affected, or compensate for them, will slightly reduce the impact. Equally the roadside planting, which may form part of the compensatory planting, will also enhance the greenery of the LR and provide the new landscape corridors. Although the residual impact upon mitigation for this LR is considered to reduce slightly, the rating is still considered to remain moderate at all stages of the Project.

A number of LRs will not be affected by the Project, but for remaining LRs which are affected, slightly adverse or insignificant residual impacts are predicted by day 1 of operation with the proper implementation of the suggested mitigation measures, except for the industrial/ open storage LRs which will experience benefits due to the Project.

Table 12.9.5 – Significance of Residual Impacts Upon Mitigation on FLN NDA LCAs

LR/LCA Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial / Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation (Day 1)	Operation (Year 10)
FLCA-1	Natural Hillside Landscape	Moderate	Moderate	MM1, MM4, MM5, MM6, MM7, MM10, MM12	MM1, MM4, MM5, MM6, MM7, MM10, MM12	Slight	Slight	Slight
FLCA-2	Rural and Urban Peripheral Village Landscape	Moderate	Moderate	MM1, MM2, MM4, MM5, MM7, MM8, MM10, MM12	MM1, MM2, MM4, MM5, MM7, MM8, MM10, MM12	Moderate	Moderate	Moderate
FLCA-3	Urban Development Landscape	Slight	Slight	MM4, MM5, MM7, MM12	MM4, MM5, MM7, MM12	Slight	Slight	Insignificant
FLCA-4	Industrial Landscape	Slight	Slight beneficial	MM4, MM5, MM7	MM4, MM5, MM7	Slight	Slight beneficial	Slight beneficial
FLCA-5	Lowland Agricultural Landscape	Moderate	Moderate	MM4, MM5, MM7, MM12	MM4, MM5, MM7, MM12 ⁽¹⁾	Moderate	Moderate	Moderate
FLCA-6	Major Transportation Corridor Landscape	Slight	Insignificant	MM4, MM5, MM7, MM12	MM4, MM5, MM7, MM12	Insignificant	Insignificant	Insignificant
FLCA-7	Major Water Course Corridor Landscape	Moderate	Slight	MM4, MM5, MM7, MM8, MM14.3	MM4, MM5, MM7, MM8, MM14.3	Slight	Insignificant	Insignificant

⁽¹⁾ Further discussion regarding impacts on agricultural land is provided in the text following the table

12.9.1.2.3 LCA Impact Ratings Prior to Mitigation

For the LCAs, no substantial impacts are predicted prior to mitigation at construction or operation. Four LCAs are considered to experience moderately significant impacts, including Natural Hillside Landscape in this area (FLCA-1), Rural and Urban Peripheral Village Landscape (FLCA-2), Lowland Agricultural Landscape (FLCA-5), and Major Water Course Corridor Landscape (LCA-7).

The majority of the FLCA-1 area will remain unaffected by the Project and where it is affected, the land use is largely compatible, although given the area affected is over 15 ha and there will be topographical changes, the magnitude of change is intermediate. This LCA is highly sensitive the intermediate magnitude of change confers a moderate impact. Areas where the impacts are more obvious are in Site A3-1 where the Fanling North Fresh Water Service Reservoir will be constructed and Site D4-1 where the Fanling North Flushing Water Service Reservoir will be constructed. In both these areas there will be some landform changes. By implementing measures to minimise the topographical changes here and landscape new slopes, as well as generally implementing tree preservation, protection, transplantation and compensation where necessary, as well as providing road greening to the affected roads and considering green roofs, including landscaping of the reservoir roof and surrounding reservoir structures, the impact is considered to reduce to slight at construction and remain slight at operation day 1 and year 10.

Rural and Urban Peripheral Village Landscape (FLCA-2) will experience moderate impact during construction and operation before mitigation. Approximately 30 ha of this LCA is affected by sites designated for land use that is not compatible with the current LCA e.g. mainly a Police Driving and Traffic Training Complex, low density residential sites with buildings up to 15 storeys high, a water service reservoir at Table Hill, as well as roads etc. and the magnitude of change is large. This LCA has medium sensitivity and the impact significance before mitigation is moderate. The change to this LCA from a general rural/ urban peripheral village landscape to an urban landscape is inevitable given the nature of the Project to provide new town areas.

The need of the Project is explained in **Chapters 1 and 2** and the planning of the RODP and the future detailed design of elements are means by which this impact can be avoided and alleviated e.g. through provision of green corridors, consideration of green roofs, provision of adequate space for soft landscaping in developments and alongside roads, careful selection of form, textures and finish colours. There are some trees within this LCA and therefore measures to protect and preserve these, as well as transplant any unavoidably affected, or compensate for them (including in woodland areas), will slightly reduce the impact. Part of the compensatory planting and road greening may also serve as screen planting, but any additional screen planting will also add to the general green nature of the LCA and help alleviate the impact. Although the

impact is alleviated, the residual impacts are predicted to remain moderate throughout the Projects construction and operation.

The Lowland Agricultural Landscape in this area (FLCA-5) is predicted to be moderately affected by the Project before any mitigation measures. Careful planning of the revised RODP means large areas at Sites A1-3 and A1-9 to the northwest of the NDA are designated to remain as agricultural land but other areas of agricultural land in FLCA-5 will be irreversibly lost. There is no direct compensation for the agricultural land lost but mitigation includes the possible preservation and protection of any trees and, where unavoidably affected, transplantation or compensatory planting which will only mitigate the impact very slightly. The loss of agricultural land has been carefully studied for this Project. The setup of the LVNP is a key component of the Project with preservation and even enhancement of agricultural land in that area and considered to go some way to help alleviate impacts on agricultural land. In addition, this LCA encompasses both active and abandoned agricultural land including orchard areas. According to a further review and site inspection in December 2012/January 2013 by PlanD with assistance from AFCD, in the surrounding areas of the Project, 160 ha of land have been found to be potentially suitable for agricultural rehabilitation/re-site. The major cluster (34 ha) is found at Kwu Tung South. Since there is no direct mitigation for the loss of agricultural land, however, the significance of impact on this LCA will remain the same before and after mitigation and therefore the impact will remain moderate throughout.

The Major Water Course Corridor Landscape (FLCA-7) is predicted to experience moderate impacts during construction which drop to slight at operation. This LCA mainly refers to the Ng Tung River and Ma Wat River Channel and the Ng Tung River will be largely unaffected by the Project, if not enhanced by the provision of waterside promenade and some parks along its length. The impact is therefore mainly due to the diversion of the Ma Wat River for the construction of the Fanling Bypass Eastern Section and the magnitude of change is considered to be intermediate at construction when the diversion takes place but the river is already channelized and at operation will flow through a similar channelized section. By ensuring measure for careful modification of the channelized river channel are implemented the impact on this LCA is considered to reduce to slight at construction and insignificant by day 1 of operation.

Impacts prior to mitigation are slight for the remaining LCAs in this area, namely Urban Development Landscape (FLCA-3), and Major Transportation Corridor Landscape (FLCA-6), and all drop to insignificant by year 10 of operation with mitigation measures. The exception is Industrial Landscape (FLCA-4) which will experience a slight beneficial impact from the Project by day 1 of operation.

12.10 Visual Impact Assessment Methodology

According to the Study Brief (ESB-176/2008) requirement, the area for the visual impact assessment shall be defined by the visual envelope from the NDAs and associated infrastructure works. Within the defined visual envelope, key groups of visually sensitive receivers (VSRs) have been identified, with regard to views from ground level and elevated vantage points. The views of these VSRs are described and the sensitivity of each VSR evaluated. The overall visual character of each NDA has also been broadly defined before considering the visual compatibility of the Project within its surroundings and the existing and planned setting as well as the Project's obstruction and interference with the key views of the adjacent areas. An assessment of the visual impact of the Project on the identified VSRs has then been undertaken within each NDA, for both construction and operational phases of the Project. Further details on the visual impact methodology are found as follows.

12.10.1 Visual Envelope – GIS Analysis

According to EIA requirement, the assessment area for the Visual Impact Assessment (VIA) should extend from the Project Site up to the visual envelope. The area within the visual envelope is considered the area that could potentially see the Project, and defines the limit of its visibility. Defining an appropriate visual envelope is the starting point to understand the visual impacts of the proposed NDAs, and it will vary depending on the nature and scale of the structures within the NDA(s).

An initial visual envelope has been determined for each NDA by using GIS analysis, inputting known data regarding the proposed built structures to model the area that can potentially see the developments. It should be noted that the GIS analysis uses topographic data as a baseline, disregarding existing built forms and vegetation which reduce the actual visual envelope. The GIS generated visual envelopes are shown in **Figures 12.18.0** and **12.19.0** but the actual visual envelope will be smaller than that shown when screening from existing built forms and vegetation has been taken into account.

For the NDA visual envelope figures generated by GIS analysis, building data for some land sites have not been finalised; either there are no building heights, or no footprint of the built structures. The GIS analysis considers plots where the heights of built structures are known and in the absence of a final built structure footprint, uses a best approximation; it, excludes land sites with no reliable data regarding built structures. There are data for all the higher rise buildings, which have the potential to cause the most visual impact. Since the land sites with limited data are expected to comprise low rise buildings, they will have limited visual impact by comparison to the high rise facilities included in the analysis and the visual envelope is considered to be comprehensive.

12.10.1.1 Zone of Visual Influence (ZVI)

In addition to the GIS analysis described above, the parameters of human vision must also be considered when determining visual impacts. If the visual envelope defines the limit of visibility, the Zone of Visual Influence (ZVI) is instead the extent to which the proposed NDAs would exert some visual impact on VSRs. The limit of the ZVI is defined as that point past which the NDAs would have an insignificant effect on the view. The ZVI is explained further below and **Figures 12.18.1 and 12.19.1** help illustrate the Primary ZVI.

As VSRs are located further away from the NDA(s), the visual impact of the NDA(s) on the VSRs will decrease, until the NDA is no longer visible. However, before the point of non-visibility is reached, the NDA structures will have reduced in scale such that they no longer exert a significant visual impact and they are essentially indistinguishable within their surroundings. The larger and denser the structures of the NDA, the more extensive the ZVI will be because the structures may be visually apparent from a greater distance away. High rise structures are the main visual influencers, although lower rise ones also exert a degree of influence.

The ZVI is therefore an area that is most likely to be visually impacted by the NDAs although particularly sensitive locations beyond the ZVI may still need to be reviewed. The visual impact of a development can be quantified by reference to the degree of influence on a person's field of vision referencing the typical parameters of human vision based on anthropometric data⁽¹⁾. These data provide a basis for assessing and interpreting the impact of a development by comparing the extent to which the development would intrude into the central field of vision (both vertically and horizontally).

12.10.1.2 Vertical Field of View

The typical line of sight for humans is considered horizontal (0°) and a person's natural line of sight is normally approximately a 10° cone of view below the horizontal if standing, or 15° if sitting. (See **Figure 12.17.1**)

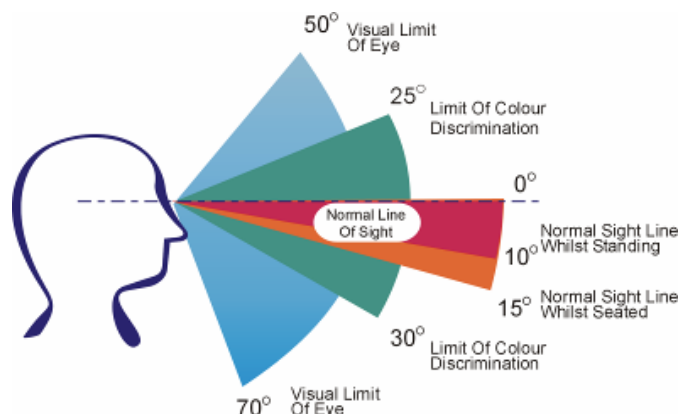


Figure 12.17.1 - Vertical field of view

¹ *Human Dimension & Interior Space – A Source Book of Design Reference Standards, Julius Panero and Martin Zelnik, The Architectural Press Ltd. London, 1979*

Objects which take up 5% of this cone of view (5% of $10^\circ = 0.5^\circ$) would only take up a small proportion of the vertical field of view, and are only visible when focused on directly. Objects that take up such a small proportion of the vertical view cone are generally indistinguishable from the existing environment when placed within a disturbed or man-modified landscape.

Given the varying number and heights of built structures in the NDAs, the tallest building in each NDA has been chosen as a reference point for assessing the visual impact based on vertical field of view. The highest structures are approximately 110 m in KTN and FLN NDAs. **Table 12.10.1** shows the relationship between the impact of a new structure and the distance of an observer from the structure, considering what proportion of the vertical line of sight it occupies.

Table 12.10.1 - Visual impact based on vertical field of view

Vertical Line of Sight	Impact	Distance from an Observer to a: a) ~110 m tall structure in KTN NDA b) ~110 m tall structure in FLN NDA
< 0.5° of vertical angle	<u>Insignificant</u> A thin line in the landscape.	a) > 12.5 km b) > 12.5 km
$0.5^\circ - 2.5^\circ$ of vertical angle	<u>Potentially noticeable</u> The degree of visual intrusion will depend on the development's ability to blend in with the surroundings.	a) ~0.2 – 12.5 km b) ~0.2 – 12.5, k m
> 2.5° of vertical angle	<u>Visually evident</u> Usually visible, however the degree of visual intrusion will depend of the width of the object and its placement within the landscape.	a) < 0.2 km b) < 0.2 km

These calculations suggest distances at which the magnitude of visual change caused by the NDAs will reduce. As shown in **Table 12.10.1** these calculations suggest that the impact of a 110 m tall building in KTN and FLN NDAs would reduce to insignificant at about 12.5 km away, as they would form less than 5% or 0.5° of the vertical field of view.

12.10.1.3 Horizontal Field of View

The central field of vision for most people covers an angle of between 50° and 60° . Within this angle, both eyes observe an object simultaneously. This creates a central field greater than that possible by each eye separately. This central field of vision is termed the 'binocular field' and within this field images are sharp, depth perception occurs and colour discrimination is possible. These physical parameters are illustrated in **Figure 12.17.2** below.

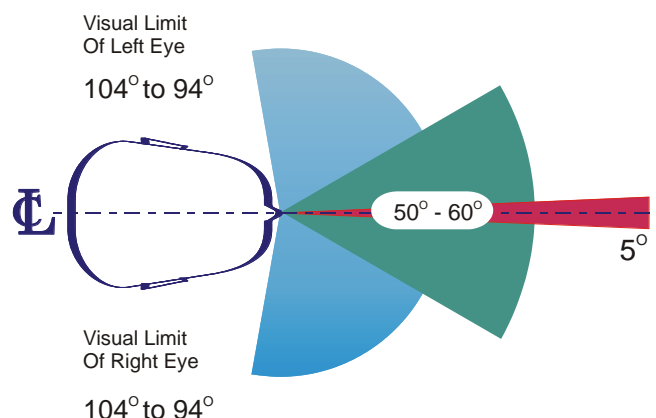


Figure 12.17.2 - Horizontal field of view

The visual impact of a development will vary according to the proportion in which a development impacts on the central field of vision. Developments which take up less than 5% of the central binocular field, are usually insignificant in most landscapes (5% of 50° = 2.5°).

Each NDA is comprised of a number of different built structures, with clusters of buildings in each land site and varying separation distances between buildings and land sites. It would not be accurate to examine the entire width of the NDA when reviewing the horizontal field of view. This effect can also be demonstrated by the example of a farm fence that may be many kilometres in width, yet as one moves further away becomes less apparent, until at some distance it is not possible to separate this element from the horizontal plane of the landscape. In assessing the visual impact of the NDAs the widest continuous or near continuous structure of cluster of buildings has been considered. It is therefore assumed that the largest horizontal components are clusters of buildings ~200 m across in KTN and FLN NDAs. **Table 12.10.2** shows the relationship between the impact of new structure(s) and the distance of an observer from the structure(s) considering what proportion of the horizontal line of sight it occupies.

Table 12.10.2 - Visual impact based on horizontal field of view

Horizontal Field of View	Impact	Distance from an Observer to ~200 m wide structure(s) in KTN NDA and FLN NDA
<2.5° of view	<u>Insignificant</u> The development will take up less than 5% of the central field of view. The development, unless particularly conspicuous against the background, will not intrude significantly into the view. The extent of the vertical angle will also affect the visual impact.	>2.3 km
2.5° – 30° of view	<u>Potentially noticeable</u> The development may be noticeable and its degree of visual intrusion will depend greatly on its ability to blend in with its surroundings.	~0.1 – 2.3 km
>30° of view	<u>Potentially visually dominant</u> Developments that fill more than 50% of the central field of vision will always be noticed and only sympathetic treatments will mitigate visual effects.	< 0.1 km

As shown in **Table 12.10.2**, these calculations suggest that the impact of proposed new structures would reduce to insignificant at approximately 2.3 km, when they would form less than 5% or 2.5° of the horizontal field of view.

It is stressed that these ranges for both vertical and horizontal fields of view, only provide a guide for the visual impact assessment and other factors must be considered, such as the context of the existing landscape and climatic conditions.

12.10.1.4 Surrounding Landscape

The extent of a ZVI differs in the context of different landscapes. A ZVI in a man-modified landscape is different to a ZVI in a pristine landscape or landscapes where there are no apparent signs of human influence. This is because in landscapes that appear 'natural' or pristine, a man made element can visually influence the landscape for as long as a viewer can discern that newly introduced element. A man made element in a pristine landscape irrevocably changes a pristine landscape from natural to man modified. Therefore, ZVIs in pristine areas are extended to the limit of human visibility. However, in man modified landscapes, in which there are other existing built forms or modifications to the landscape, the ZVI extends to that distance at which the new structures become minor elements in the landscape to all but the most sensitive of viewers.

Since landscape surrounding the proposed NDAs has all been modified by man, the new NDA structures will generally integrate with their surrounding and therefore be much less apparent at a distance than if the landscape was pristine.

12.10.1.5 Climatic Conditions

Climatic conditions that reduce the visibility of the project might also be considered (e.g. cloud cover, rainfall, poor air quality) but for a worse case visual impact scenario, clear viewing conditions have been assumed.

Although analysis from the vertical field of view would suggest the ZVI should extend to approximately 12.5 km in KTN and FLN NDAs, noting observers closer to the NDAs will be more significantly visually affected than those farther away, the man made nature of the surrounding landscape with high numbers of people present, particularly in KTN NDA and FLN NDA, and the screening effect of any local vegetation and planting, it is suggested that the focus of selecting areas of VSRs within the ZVI be on those closer to the NDAs. A 'Primary Zone of Visual Influence' has therefore been included in **Figures 12.18.0 and 12.19.0** and **Figures 12.18.1 and 12.19.1**, to help illustrate the areas where VSRs may be most affected.

12.10.2 Visual Sensitive Receivers (VSRs) & Vantage Points (VPs)

Having determined the assessment area for the Visual Impact Assessment, VSRs have been identified within the ZVI of the Project. In some circumstances, VSRs have been identified beyond the ZVI to recognise the visual impact (or lack of) on specific locations of particular sensitivity.

- Within the ZVI, VSRs have been selected considering locations that are either particularly visually sensitive (see below regarding the 'Type' of VSR) or indicative of the visual impact for a number of locations that have been identified as VSRs and selecting the best representative area i.e. one VSR might represent a number of viewers in different high rise flats in a similar area and at a similar distance to the development. Existing vegetation, buildings and housing orientation and any other factors blocking views towards the proposed NDAs have been assessed during site visits and the selected VSRs are considered to represent the full range of viewers within the ZVI and include those that would potentially be worst affected by the Project. The selected VSRs are mapped in **Figures 12.18.0 and 12.19.0** for KTN and FLN NDAs respectively, while **Figures 12.18.1 and 12.19.1** provide more detail of VSRs and VPs in the Primary ZVI for each NDA. The existing views from the VSRs are described for each VSR in **Table 12.11.2** for KTN NDA and **Table 12.11.3** for FLN NDA. These tables also report the VSR sensitivity.

Photographic records helping to illustrate the existing views from each VSR are presented in **Figures 12.20.1-12.20.24** for KTN NDA, **Figures 12.21.1-12.21.30** for FLN NDA. It should be noted for each VSR there are likely to be a number of existing views and the photographic records try to represent views in the general direction of the NDAs. However, access could not be gained to all VSRs, especially for private residential developments, and therefore the representative photographs may have been adjusted if necessary and represent the best alternative e.g. photographs may have been taken from a publically accessible ground level where there was no access to higher levels of a private residential development. The alternative

viewing angles for these representative photographs were chosen as they share the most similar view towards the NDA as the inaccessible location, and hence best represent the VSR group. Where no view towards the NDA was evident at ground level, the existing photograph helps illustrate how ground level views are largely blocked e.g. by other structures or vegetation.

- Vantage Points or Viewpoints (VPs) were selected from key VSRs within the ZVI, from which to develop photomontages and help illustrate the visual change that would be brought about by the proposed development in NDAs. VSRs were grouped into 'Strategic', 'District' and 'Local' (as explained further in **Section 12.11**) and VPs selected to ensure each VSR group is represented and in combination they give a good overall representation of how the NDAs will appear to viewers both near and far and of different sensitivities. Photomontages have been prepared from the VPs to conceptually illustrate the visual impacts, both unmitigated and mitigated at Day 1 and Year 10 of operation and supplement the visual changes described in the text. The photomontages are presented in **Figures 12.22.1-12.22.14** for KTN NDA and **Figures 12.23.1-12.23.16** for FLN NDA. The VP photograph illustrating the existing view uses the photographic record from the corresponding VSR and therefore selection of this best representative view follows the same criteria as described for VSRs above.

- Having selected the VSRs, their sensitivity is quantitatively and qualitatively assessed, influenced by a number of factors including the following:

- Type of VSR. VSRs are categorized according to whether the viewer is at home, at work or school, at play or leisure, or travelling. (Ranked by the major VSR types, as described below)

Residential VSRs – These VSRs are people living in the area and who view the proposed NDA from their homes. They are considered the most sensitive VSRs due to the character of the view from their homes having a substantial effect on their perception of quality and acceptability of their home environment and general quality of life.

Occupational VSRs – These VSRs are people working or in education in the area, who view the proposed NDA from their workplace or education centre. Visual amenity is in general not considered a top priority within the average workplace and these VSRs are considered to be relatively less sensitive than residential VSRs as their view will have a less important, although still material, effect on their perception of quality of life. The degree to which this applies to workers depends on whether their location is industrial, retail or commercial. The VSRs in industrial areas, such as factories, are generally considered to be the least sensitive, due to the relatively low quality of their existing view in an industrial area.

Recreational VSRs – These VSRs are people engaging in recreational activities such as hikers on established trails and footpaths, people participating in team sports at recreation grounds or at leisure. Sensitivity of these VSRs

depends on duration of stay, nature of the activity and how enclosed the location is.

Travelling VSRs – These VSRs are people travelling on public roads and railways, both in public and private vehicles and on foot. They have varying sensitivity depending on the speed, nature and frequency of travel, but are generally considered to be transitory to the area with less regard for the surrounding views and with low sensitivity.

- Number of individuals. (Ranked as very many, many, few or very few)
- Quality of existing view (Ranked as good, fair or poor)
- Availability of alternative views. (Ranked as yes or no)
- Degree of visibility. (Ranked as full, partial or glimpse)
- Duration of view. (Ranked as long, medium or short)
- Frequency of view. (Ranked as frequent, occasional or rare)
- The sensitivity of each VSR is based on the values of all the above factors in totality and classified as follows:
 - 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.

12.10.3 Visual Impact Assessment

Visual impacts have been assessed for the construction and operational phases of the Project in each of the NDA Study Areas and associated Schedule 2 DP areas according to the methodology and processes as follows.

- Identification of potential sources of visual impacts. These are the various elements of the construction works and operational procedures that could generate visual impacts.
- Rating of the magnitude of visual change, which is quantified as far as possible and depends on a number of factors including the following.
 - Distance between the closest source of impact and the VSR (Given in meters)
 - Scale of the development. This is assessed using a number of factors, including: absolute dimensions of new built structures visible to the VSR; relative dimensions of the new built structures compared to other structures visible to the VSRs in their existing view (Ranked as small, medium or large)

- Potential blockage of view. (Ranked as full, partial or nil)
 - Duration of the impacts. (Ranked as temporary [short/medium term] or permanent)
 - Compatibility of the Project and associated works with the existing and planned landscape in the vicinity. (Ranked as good, fair or poor)
 - Reversibility of change (ranked as reversible or irreversible).
- The magnitude of change caused by visual impacts on each VSR, is based on the values of all the above factors in totality and classified as follows:
 - Large:** The VSRs would suffer a major change in their viewing experience
 - Intermediate:** The VSRs would suffer a moderate in their viewing experience
 - Small:** The VSRs would suffer a small change in their viewing experience
 - Negligible:** The VSRs would suffer no discernible change in their viewing experience
 - Identification of potential visual mitigation measures, to reduce the significance of visual impacts to acceptable levels during design, construction and operation of the Project and its associated works, have been considered. The mitigation measures proposed are not only concerned with damage reduction but will also include consideration of potential enhancement of existing visual (and landscape) quality. Mitigation measure may take the form of
 - Adopting alternative designs or revising the basic engineering and / or architectural design, to prevent and / or minimize adverse impacts. Alternative alignment(s), design(s) and construction methods that avoid or reduce the identified landscape impacts have been evaluated for comparison before adopting other mitigation or compensatory measures to alleviate the impacts.
 - Remedial measures such as colour and textural treatment of physical, engineering and building features; and
 - Compensatory measures such as the implementation of landscape design measures (e.g. tree planting, creation of new open space etc.) to compensate for unavoidable adverse impacts and to attempt to generate potentially beneficial long-term impacts.

To ensure their effectiveness throughout the construction and operational phases of the Project and associated works, the relevant responsible parties for the on-going management and maintenance of the proposed mitigation measures have been provisionally identified.

Approval-in-principle to the initial capital funding, implementation, management and maintenance of the proposed mitigation measures is being sought from the appropriate authorities, according to the principles in ETWB TCW No. 2/2004.

- Prediction of visual impact significance before and after the implementation of the mitigation measures. By understanding the magnitude of visual change caused by the various impacts and the sensitivity of the various VSRs, it is possible to categorize impacts in a logical, well-reasoned and consistent fashion. **Table 12.10.3** shows the rationale for dividing the degree of significance into four thresholds, namely insignificant, slight, moderate, and substantial, depending on the combination of a negligible-small-intermediate-large magnitude of change and a low-medium-high degree of sensitivity of VSR.

Table 12.10.3 - Relationship between receptor sensitivity and magnitude of change in defining impact significance

		Receptor Sensitivity (of VSR)		
		Low	Medium	High
Magnitude of Change	Negligible	Insignificant	Insignificant	Insignificant
	Small	Slight	Slight/ Moderate	Moderate
	Intermediate	Slight/Moderate	Moderate	Moderate/ Substantial
	Large	Moderate	Moderate/ Substantial	Substantial

The four thresholds for the degree of significance are explained below. All impacts are assumed to be adverse in the text of the Report, unless specifically identified otherwise.

Substantial: Adverse / beneficial impact where the proposed Project will cause significant deterioration or improvement in existing visual quality

Moderate: Adverse / beneficial impact where the proposed Project will cause a noticeable deterioration or improvement in existing visual / beneficial impact where the proposed Project will cause a noticeable deterioration or improvement in existing landscape quality

Slight: Adverse / beneficial impact where the proposed Project will cause a barely perceptible deterioration or improvement in existing visual quality

Insignificant: The impact will cause no discernible change in the existing visual quality

- To help illustrate the effectiveness of the proposed visual mitigation measures, photomontages from selected Vantage Points (VPs) looking towards the Project have been prepared. The photomontages illustrate:
 - Existing conditions;

- Day 1 of Operation Phase without Mitigation Measures;
- Day 1 of Operation Phase with Mitigation Measures; and
- Year 10 of Operation Phase with Mitigation Measures.

These photomontages are presented in **Figures 12.22.1-14** for KTN NDA and **Figures 12.23.1-16** for FLN NDA.

- Prediction of Acceptability of Impacts. An overall assessment of the acceptability, or otherwise, of the impacts in accordance with the five criteria set out in Annex 10 of the EIAO-TM, namely:
 - Beneficial - if the project will complement the landscape and visual character of its setting, will follow the relevant planning objectives and will improve overall and visual quality;
 - Acceptable if the assessment indicates that there will be no significant effects on the landscape, no significant visual effects caused by the appearance of the project, or no interference with key views;
 - Acceptable with mitigation measures if there will be some adverse effects, but these can be eliminated, reduced or offset to a large extent by specific measures;
 - Unacceptable if the adverse effects are considered too excessive and are unable to mitigate practically;
 - Undetermined if significant adverse effects are likely, but the extent to which they may occur or may be mitigated cannot be determined from the study. Further detailed study will be required for the specific effects in question.

12.11 Visual Baseline Conditions

Both NDAs cover a total area of approximately 614 ha in the north-eastern part of the New Territories. Some Schedule 2 DPs extend outside the NDA boundaries and these are considered in **DP Packages 12A-D**. All areas are relatively near the border with China and generally have a rural/semi-developed nature in stark contrast to the city of Shenzhen visible across the border. The general visual baseline conditions for each NDA are described in **Section 12.11.1** for KTN NDA and **Section 12.11.2** for FLN NDA. An overall description of the areas' visual amenity and character is given first, before detailing the VSRs relevant to the NDA and describing their sensitivity.

VSRs and VPs have been grouped into 'Strategic', 'District', or 'Local' levels as detailed in **Table 12.11.1**. The groupings are described below.

- Strategic VSRs are those viewers generally at high elevations and far from the NDA areas such that views give a general overview of a large part, if not all, of the NDA and surrounding areas. The Strategic VSRs are mainly recreational viewers. VPs are all on hiking trails, mainly at lookout points or pavilions but also at important peaks and

are selected to give a general visible impression of the NDA(s) as a whole.

- District VSRs are generally found at slightly higher elevations, but closer to the NDAs and have a less extensive view or only see part of the NDAs. The District VSRs are both residential and occupational viewers at high levels of buildings, and recreational viewers on hiking trails. The corresponding VPs are from flats, industrial buildings and on hiking trails and have been selected to provide a range of closer views of large sections of the NDAs.
- Local VSRs are found within an NDA boundary or at low levels reasonably close to or within the NDAs. Their views are often restricted to their local area. VSRs are of all types. Corresponding VPs within the NDAs are both at ground level and higher elevations, whereas those outside the NDAs are generally at ground level. These VPs have been selected both to illustrate restrictions in views not apparent from the Visual Envelope, as well as to provide some insight into what changes viewers both within and close to the NDAs might experience.

Table 12.11.1 - Details of local, district and strategic VSRs/VPs in each NDA (Refer to **Figures 12.18.0 and 12.18.1** for KTN locations, and **Figures 12.19.0 and 12.19.1** for FLN locations)

NDA	VSR/VP		
	Local	District	Strategic
KTN	K1; K4; K6a (F26); K6b; K7a (F27); K7b; K8; K9; K10; K11; K12; K14; K17; K18; K19; K20; K23	K3; K5a (to north and to south); K5a/b (to east); K13; K15; K16; K21	K2a (to south west); K2b (F30) (to south east); K22 (F28); K24 (just west of F29)
FLN	F1; F2; F4; F5; F6; F8; F9; F10; F12; F13; F14; F16; F17; F19; F21; F22; F23; F24; F26 (K6a); F27 (K7a)	F7; F11; F15; F18; F20; F25	F3; F28 (K22); F29 (just east of K24); F30 (K2b) (to south east)

Note: VSR shown in bold indicate a photomontage has been prepared from this location i.e. it is also a VP

Considering the long time frame over which the NDAs will be implemented, impacts on 'future' VSRs, such as those at the proposed Liantang Border Control Point, have not been assessed. Without knowing which 'future' VSRs will exist when construction for the NDAs starts and finishes, impacts cannot be assessed.

12.11.1 Kwu Tung North NDA

The area covered by KTN NDA is around 450 ha and is bound by: the Closed Area Boundary to the north; Shek Sheung River to the east; Fanling Highway and Castle Peak Road to the south; and Pak Shek Au and Tit Hang villages to the west. The landscape character of the area

can be broadly described as a low value, rural lowland area predominantly used for low value open storage and industrial uses, surrounded by higher value, natural landscape features, villages and agricultural land.

This NDA is fairly enclosed by prominent green hill ranges in close proximity on three sides: the ridges of Tai Shek Mo to the north; Lok Ma Chau range to the west (Western ranges); and Ki Lun Shan and Ki Lun Shan Au to the south. The lower lying Ma Tso Lung valley runs between Lok Ma Chau range and Tai Shek Mo while between Lok Ma Chau range and Ki Lun Shan there is lower land containing Pak Shek Au village and the Fanling Highway. To the east of the NDA, the land is generally flatter and more open until past the urban area of Sheung Shui, where the hill range including Cham Shan and Wa Shan is visible. Fung Kong Shan is also a prominent hill in the middle of this NDA, increasing the general green aspect of the area. Hill slopes are undisturbed and mainly vegetated by grass and scrub vegetation with trees found principally in the foothills and major valleys. Villages such as Kam Tsin and Ho Sheung Heung have been established at the base of the foothills with clusters of trees or woodland on the lower slopes.

The central southern and south eastern parts of this NDA are generally flat with the central southern part being more developed and the south eastern part made up of the predominantly agricultural Long Valley. The Long Valley is a significant rural feature of this area with high landscape value, made up of a mix of active and inactive agricultural land, some ponds, small areas of marsh and mitigation wetlands with limited built structures. The central southern part of the NDA is more developed, made up of mixed land uses such as small residential developments, scattered villages, agricultural lands, rural areas and rural industries including vehicle repair, construction material storage and container storage. Villages, such as Yin Kong Village and Ho Sheung Heung are generally made up of traditional houses with no high rise structures, complementing the rural surroundings. Rivers and streams are also important features of this NDA. Sheung Yue River is a channelized river that runs in a southwest to northeast direction along the western side of Long Valley until it joins Shek Sheung River, another channelized river but far wider, and this river binds the NDA.

While this NDA is predominantly rural in nature, the Fanling Highway in the south is a major road with heavy traffic and with Castle Peak Road running parallel; these combined transport routes form a prominent linear, urban feature cutting through the landscape. There are also high voltage power lines running across the western and northern parts of the area, and in between the Fung Kong Shan knolls. In addition, at the visual envelope boundary to the eastern part of the NDA, the low to medium rise industrial area of Sheung Shui is visible as well as some of the high rise development in north Sheung Shui and Fanling. Although the urban sprawl of Shenzhen Special Economic Zone (SEZ) is generally not visible from most of this NDA, some high rise structures in the city do protrude into skyline in places.

At lower levels, visual access to the NDA site is severely interrupted by intervening obstacles. This is particularly true of the existing development and vegetation lining the Fanling Highway which screens views from the south and the existing wooded knolls at Pak Shek Au which restricts views from the west of this position. The landform, vegetation and built development of Ma Tso Lung San Tsuen serve to screen low-level views from the north. Whilst low level views from the east are severely interrupted by the development associated with the Yin Kong area and the large scale commercial/industrial and utility development lining the MTRC East Rail to Lo Wu.

In consideration of the whole development in its entirety, it should be noted that the likely visual impacts would be apparent at two levels; firstly, due to the development as a whole, and secondly, due to the individual elements of the project that have been designated within KTN NDA. The visual amenity for each view varies according to a number of factors described in the methodology and the predicted level of visual impact will therefore vary between VSRs.

Table 12.11.2 below details the VSRs in the KTN NDA ZVI and describes their overall sensitivity. **Figures 12.20.1-24** present photographic records from one location within each VSR, looking towards the relevant NDA. Since access could not be gained for all VSRs, especially for private residential developments, the representative viewing locations may have been adjusted if necessary, as described in the methodology. Bearing in mind most VSRs will have various views, and considering access was not always available, the selected photographs are considered the best alternative that represents the typical view of the VSRs.

Table 12.11.2 - List of the visual sensitive receivers and their sensitivity- KTN NDA (Refer to **Figure 12.18.0** and **Figure 12.18.1** for VSR/VP locations and **Figures 12.20.1-24** for representative photographs of the existing view from a location within each VSR/VP towards the KTN NDA)

Remarks: The *approximate closest viewing distance to the proposed NDA* is measured from the edge of the VSR group to the closest built structure proposed within the NDA.

VSR Code	Name	VSR Category (Strategic/ District/ Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good/Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
K1	Ma Tso Lung San Tsuen	Local	Residential - Low Rise	20	Few	Good	No	Partial	Long	Very Frequent	High
In the mid-distance, the high hills of the Western Range (including Ma Tso Lung) to the west, Tai Shek Mo to the north east and knolls of Fung Kong Shan to the south frame the views from Ma Tso Lung San Tsuen. Through one narrow viewpoint to the northwest between the hills, the high rise buildings of Shenzhen are visible in the background. Generally the view is of a rural landscape, characterized by hills vegetated with shrubland and grassland and wooded valleys and knolls, although the existing high voltage power lines serve as a visually detracting element in the background. Houses predominantly face south west with most of their direct view encompassing the proposed NDA, although low level views (as shown in Figure 12.20.1) are largely blocked by vegetation and existing built structures.											

VSR Code	Name	VSR Category/(Strategic/District/ Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good/Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
K2 (F30)	Tai Shek Mo Footpath & Lookout	Strategic	Recreational	380	Very Few	Good	Yes	Full	Medium	Occasional	Low
	The main track to the summit of Tai Shek Mo is an old road overgrown with vegetation. It is located on the east side of the hill and the high and thick vegetation along it, as well as the existing topography (Tai Shek Mo spur south), block views to the south and southwest towards the Kwo Tung Area. At the summit, there is a panoramic view and in the background to the southeast the high rise buildings of the Fanling/ Sheung Shui urban area are visible. The Lo Wu Correctional Institution can be seen through vegetation at the base of the hill in this direction, with the Long Valley area agricultural fields clearly visible in the middle distance. Ng Tung River and Sheung Yue River are also visible meandering through the landscape. Alternatively facing north, being right on the Closed Area Boundary and at elevation, there are clear views into China and the high rise urban area of Shenzhen, contrasting starkly with the small rural area of HKSAR at the foot of the hill and south of the border. This track is only accessible by foot and not used frequently. Other trails on the hillside do not appear to be well used either, suggesting very few visitors pass this way and is largely why this VSR has low sensitivity.										
K3	Western Range - Lok Ma Chau Footpath	District	Recreational	550	Very Few	Good	Yes	Full	Medium	Occasional	Low
	The trail to the ridgeline of Lok Ma Chau is not readily accessible due to overgrown vegetation at lower levels. Once above the shrubline however, views are panoramic in all directions. From the high point, views north and west are characterized by the green, natural landscape of Hong Kong contrasting with the urban sprawl of Shenzhen and its high rise buildings north of the border. Views east and south, in the direction of the proposed KTN NDA, take in the grasslands of the Lok Ma Chau ridgeline and other nearby hills in the foreground. These hills partially block some views down to the lower ground where KTN NDA will be. The lowland is visible and generally has a green aspect, with intermittent buildings. The higher density new low-rise development areas of Valais and Europa Gardens are also visible. To the east, the high rise buildings of Sheung Shui and Fanling urban area are prominent in the background. Given this area is so inaccessible and very few people use the trail, the sensitivity is low.										

VSR Code	Name	VSR Category/(Strategic/District/ Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good/Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
K4	Cottage Area (Western Range)	Local	Residential - Low Rise	20	Few	Good	No	Partial	Long	Very Frequent	High
	This VSR is located in a small valley at the eastern foothills of the Western Range, just north east of Tit Hang and south west of the Lo Wu Rifle Range. Views are limited to the south east in the direction of the KTN NDA with the Western Range rising behind, blocking views to the north west. In the mid-distance, Tai Shek Mo summit and ridgeline frame the view from north east to east. To the east, the view is partially blocked by the knolls of Fung Kong Shan but some of the Kwu Tung Area is visible and in the background the urban sprawl of Fanling/ Sheung Shui is evident. To the south, the existing industrial area near Tung Fong is a visually detracting element in the mid-distance. Generally the existing view is rural in nature, characterized by mixed-use cottage areas, interspersed by mature trees and small copses and the wooded foothills of Tai Shek Mo in the foreground. Residents in these settlements have their low level views largely blocked by vegetation (e.g. small copses) and existing built structures.										
K5a	Northern Knoll of Fung Kong Shan	District	Recreational (& some Residential & Occupational)	Approx. 70m when looking north; 150m when looking southwest	Few	Good	Yes	Full	Medium	Frequent	Medium
	Elevated views from Fung Kong Shan northern knoll are framed by hills in most directions including the Western Range and Tai Shek Mo across the north. Also facing north, some Shenzhen high rise buildings are visible in the distance. The high rise buildings of Fanling/ Sheung Shui are evident in the background to the south east. The existing electricity pylons nearby and the open industrial area at the southern base of the knoll are visually detracting elements to the view which in general is green from the shrubland and grassland of the hills. Facing south the view is partially blocked by the southern knoll, but Ki Lun Shan can be seen above this in the distance and Wu Tip Shan to the distant south east. The low lying ground visible around the knoll is rural with some evidence of urban development and low rise residences. People in the area will be visitors on the trails but also workers at the industrial areas and some residents. VSRs at the lower ground levels will have views towards the KTN NDA partially blocked by existing vegetation, natural topography and built structures, but at high levels have full views in many directions. The ridgeline is not easily accessible however, with no clear path										

VSR Code	Name	VSR Category (Strategic/ District/ Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good/Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
K5b	Southern Knoll of Fung Kong Shan	District	Recreational (& some Residential & Occupational)	Approx. 70 m	Few	Good	Yes	Full	Medium	Frequent	Medium
	Fung Kong Shan ridgeline runs in an inverted C shape from north, via northeast, to south and the ridgeline is not easily accessible with no clear path and much vegetation. The elevated view from the southern knoll is framed by hills in most directions. Although the view north is partially blocked by the northern ridge, some Shenzhen high rise buildings are still visible in the background. Ki Lun Shan can be seen in the background facing south while to the south east high rise buildings of Fanling/ Sheung Shui urban area are evident with Wu Tip Shan in the far distance. The existing electricity pylons nearby and open industrial area at the northern base are both visually detracting elements to the view which in general is green from the shrubby grassland of the hills. The low lying ground makes up a large part of the view and is rural with some evidence of urban development and low rise residences in places. Fanling Highway can also just be made out in the middle distance. VSRs at the lower ground levels will have views towards the KTN NDA partially blocked by existing vegetation, natural topography and built structures, although at high levels they will have full views in many directions.										
K6 (K6a is the same location as F26 but different view)	Ho Sheung Heung	Local	Residential - Low Rise	100	Many	Good	No	Glimpse	Long	Occasional	High
	The topography of Tai Shek Mo and a Fung Shui Woodland knoll west of Ho Sheung Heung block views to the north and west for most of this VSR group. At ground level most views are blocked by existing built structures and vegetation, including the landscaped trees along the trained Sheung Yue River. Most houses face east, but from elevated viewpoints, such as the higher levels of the three storey houses and the slightly elevated Chung Kuk Path, there are some glimpses to the southeast of the Long Valley area with the open agricultural land and some of the high-rise buildings of Sheung Shui/Fanling over the trees in the background. KTN NDA mainly lies to the west of this settlement on the other side of the Tai Shek Mo foothills and the Fung Shui Woodland knoll, with views blocked by the natural topography, but also some developments are to the south and east of southern areas of the village.										

VSR Code	Name	VSR Category/(Strategic/District/ Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good/Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
K7 (K7a is the same location as F27, different view)	Tsung Yuen	Local	Residential - Low Rise	300	Few	Good	No	Glimpse	Long	Occasional	Medium
K8	The topography of Tai Shek Mo and trees lining the road, both to the west of Tsung Yuen, block views to the north and west of this VSR. At ground level most views east are blocked by existing tall trees in the foreground. Most houses face east-west, but from elevated viewpoints, such as the higher levels of the three storey houses, the Shek Wu Hui Sewage Treatment Work may be visible to the south east as well as glimpses of the open agricultural land east of the village and some of the high rise buildings of Sheung Shui/Fanling in the background. KTN NDA mainly lies to the west of this settlement and views are largely blocked by the natural topography, vegetation and existing buildings.										
	MTR East Rail line north of Sheung Shui cycle track	Local	Travelling	750	Very Many	Fair	Yes	Glimpse	Short	Occasional	Low
Travellers along this section of the MTR have intermittent views through track side vegetation, of a rural nature, including Long Valley, to the west and the more urban and industrial areas of Sheung Shui to the east. They may intermittently have view to Tai Shek Mo and its foothills above the vegetation at lower levels. These VSRs will be travelling at high speed and will generally be commuters with less of an interest in the view, as well as tourists with more of an interest. Their views will be constantly changing as they travel along the rail line.											
K9	Long Valley Villages	Local	Residential - Low Rise	70	Many	Good	No	Full	Long	Very Frequent	High
	Views north and west from Yin Kong and other houses in the Long Valley area are predominantly of the traditional agricultural fields of the Long Valley with the upland areas of Tai Shek Mo and the Western Range also visible in the background. Electricity pylons are visible in the middle distance to the north and the medium rise Shek Wu Hui Sewage Treatment Works is also visible. To the north east, the high rise buildings of Sheung Shui are visible above the vegetation in the middle distance, with the green hills of Wa Shan and Tsung Shan behind in the far distance.										

VSR Code	Name	VSR Category/(Strategic/District/ Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good/Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
K10	Cycle track along riverside near Long Valley	Local	Travelling (& Recreational)	70	Few	Good	Yes	Partial	Medium	Occasional	Medium
	This cycle track runs along Sheung Yue River to the west of Long Valley area and has intermittent vegetation along its embankments which screens much of the ground level view west towards the KTN NDA. The trained river is visible through the vegetation screen but only some higher structures are visible above tree level including the Tai Shek Mo peaks in places. From this track the MTR East Rail control compound is visible in the middle distance. There is an easterly view over the agricultural land of Long Valley and green hills visible to the north west and south east in the far distance. Electricity pylons and a small number of Shenzhen high rise buildings over the tops of the hills can also be made out in the distance. In general the views for this VSR are rural in nature with urban elements evident at some points but not that pronounced. VSRS travelling along the track will be moving relatively slowly so their duration of any particular view is medium.										
K11	Cycle track west of Shek Wu Hui Sewage Treatment Works	Local	Travelling (& Recreational)	500	Few	Fair	Yes	Partial	Medium	Occasional	Low
	This cycle track runs along Shek Sheung River east of Long Valley. In the foreground the trained river is visible, with the intermittent vegetation along the embankment and blocking much of the ground level view to the west such that Long Valley is not clearly visible although the green hills of Tai Shek Mo are visible in the background. The track runs along an industrial area to its east, with views through the embankment vegetation including that of the medium rise Shek Wu Hui Sewage Treatment Works and MTRC East Rail line in the foreground, with some of the high rise buildings of the urban area visible in the background. VSRS travelling along the track will be moving relatively slowly so their duration of any particular view is medium.										

VSR Code	Name	VSR Category/(Strategic/District/ Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good/Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
K12	Tsung Pak Long	Local	Residential - Low Rise	570	Few	Good	No	Partial	Long	Very Frequent	Medium
	Views from Tsung Pak Long are partially blocked by existing village vegetation lining a channelized water way to the west and Fanling highway to the south. Various hills are visible in the background; Ki Lun Shan to the south west, the Western Range to the west and Tai Shek Mo further north. Houses generally do not face west towards the KTN NDA and views from ground level are fairly confined by built structures and vegetation but at elevated levels and facing the right direction, the rural character of Long Valley may be more evident to the west. Also at higher levels, the industrial area is visible to the north, the low rise village of Tai Tau Leng to the east and glimpses of Hong Kong Golf Course (Fanling) over Fanling Highway to the south.										
K13	Industrial Zone northeast of Tsung Pak Long	District	Occupational	820	Many	Poor	Yes	Full	Short	Occasional	Low
	Views from the medium rise industrial buildings north of Choi Yuen Road have open views at elevated levels of the traditional agricultural fields of the Long Valley and the low-rise residential development of Tsung Pak Long and Yin Kong to the west and southwest and this view is predominantly rural. Workers in these factories will be concentrating on their work inside the buildings, not the views outside. They have limited windows facing out in the direction of the KTN NDA area so will only get glimpse views.										
K14	Tai Tau Leng	Local	Residential - Low Rise	1000	Few	Good	No	Glimpse	Long	Frequent	Medium
	The view west towards Long Valley from Tai Tau Leng is largely blocked by existing vegetation around the village, the small, wooded knoll to the west of the village. The traditional village of Tsung Pak Long is visible in this direction too, blocking low level views beyond. Otherwise the views are similar to those from Tsung Pak Long; generally of a more rural nature west and urban nature east but in general houses do not directly face the KTN NDA area.										

VSR Code	Name	VSR Category/(Strategic/District/ Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good/Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
K15	Choi Po Court / Choi Yuen Estate	District	Residential - High Rise	1050	Very Many	Good	Yes	Full	Long	Very Frequent	High
	The views from these residential buildings including Choi Po Court, and Choi Yuen Estate are open and panoramic for those flats at higher levels. Only those apartments facing north west have full and panoramic views towards KTN NDA with no alternative, although other residents may face away from the area. For those facing north west, in the foreground the industrial zone between Choi Yuen Road and the MTR East Rail line is a prominent feature, continuing north east to include the industrial zone east of the railway with the Shek Wu Hui Sewage Treatment Works. The Lo Wu Correctional Institution is also visible in this direction, at the foot of Tai Shek Mo, and in the far distance the high rises of Shenzhen are visible. The view spanning west is more rural, with Tai Tau Leng and Tsung Pak Long in the foreground and the open agricultural fields of Long Valley behind, with the Western Range in the background. Further west the new developments of Valais and Europa Garden are just visible around Fanling Highway against the green backdrop of Ki Lun Shan.										
K16	Tai Ping Area High Rise Residential Blocks	District	Residential - High Rise	1000	Very Many	Good	Yes	Full	Long	Very Frequent	High
	Views from the higher levels of high-rise residential blocks around the area of Tai Ping Estate and Royal Green, including Ching Ho Estate have panoramic, open views. Some apartments at high levels facing west and north west look towards the proposed KTN NDA site; for these residents other high rise blocks or industrial areas and Fanling Highway are prominent features of the existing view but there are also significant open areas with low lying woodlands and some low-rise residential areas which are markedly rural in character. Of all the residents in these high rise apartments, only about a fifth are at high enough levels and facing in the right direction have views of the proposed KTN NDA site.										

VSR Code	Name	VSR Category/(Strategic/District/ Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good/Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
K17	Hong Kong Golf Club, Fanling	Local	Recreational	350	Many	Good	Yes	Glimpse	Medium	Occasional	Low
	Due to the low lying nature of the golf course, extensive trees within the golf course, woodland around the village in Kam Tsin and screen planting along Castle Peak Road and Fanling Highway (all to the north of this VSR), views north towards the proposed KTN NDA are blocked by trees and vegetation. The golf course is only accessible to members but many members use the golf course. The views from the golf course are fairly self-contained characterized by the greens, fairways, bunkers and landscaped planting including patches of tall woodland. Since viewers have transient views as they go round the golf course, are concentrated on landscaped views within the site and are unlikely to be able to see the KTN NDA, they are considered low sensitivity.										
K18	Ascot Park Area, Kam Tsin	Local	Residential - Low Rise	225	Very Many	Fair	No	Glimpse	Long	Occasional	Medium
	This VSR represents residents in low rise developments around Kam Tsin, including Kam Tsin Tsuen, Ascot Park, Royal Oaks and La Regent Park. Views to the north for these viewers are partially blocked due to a number of factors. These include low lying topography; many houses in close proximity shielding each other's views; landscaping including screen planting along the roads; and Fanling Highway to the north. At the elevated levels of the houses, more open views north towards the KTN NDA may be possible, but will still be partially screened by vegetation and have Fanling Highway in the foreground.										
K19	Existing Road Bridge link over Fanling Highway	Local	Travelling	50	Very Many	Fair	Yes	Full	Short	Occasional	Low
	This VSR represents views travelling along Fanling Highway and Castle Peak Road, whether by vehicle or on foot. For vehicles travelling along Fanling Highway and Castle Peak Road, the view north is contained by the existing development lining the roads (such as Dills Corner Garden) and low rise buildings along Castle Peak Road as well as by tree and shrub planting along the roads. The view is characterized by these elements and the existing highway structures such as the footbridge north of Valais housing development. For pedestrians using the footbridge, the highway and road with their associated traffic form visually detracting elements in the foreground and the peaks of the Western Ranges are just visible in the background over the greenery of the roadside planting.										

VSR Code	Name	VSR Category/(Strategic/District/ Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good/Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
K20	Valais & Europa Garden New Residential Development Area	Local	Residential - Low Rise	150	Many	Fair	No	Glimpse	Long	Frequent	High
	This VSR represents residents in low rise residential development to the south of Fanling Highway, including Valais and Europa Garden. These viewers have no view north due to the tall noise barriers erected along the Highway and landscape planting shielding the view of the barriers themselves. Although access to the developments is limited to residents only, it is assumed that the top floors of these low rise developments, if facing the right direction, may see over the noise barriers to the KTN NDA in the north. This view is dominated by Fanling Highway in the immediate foreground with the roadside planting and for some the mature trees and small copses, that are features of the Dills Corner Garden, are also visible.										
K21	Kwu Tung Service Reservoir	District	Recreational	300	Very Few	Good	Yes	Glimpse	Medium	Occasional	Medium
	There is a panoramic view from this location that is partially blocked by vegetation along the path and around the reservoir when facing north. This view includes the Western Range and Tai Shek Mo in the background, with some of the high rise buildings of Shenzhen visible in the far distance beyond these hills. From this elevated location, the foreground view is of the valley floor of Fung Kong, Kwu Tung, Long Valley, Hang Tau Tai Po, Kam Tsin. Valais and scattered low rise villages with tree clusters are also visible from south towards north.										

VSR Code	Name	VSR Category/(Strategic/District/ Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good/Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
K22 (F28)	Ki Lun Shan Footpath	Strategic	Recreational	650	Few	Good	Yes	Full	Medium	Occasional	Medium
	The footpath up to the summit from the south is largely through grassland with the main screen to the view north being the ridgeline itself. Power pylons are also visually distracting elements close to the footpath. The footpaths on the north Ki Lun Shan are restricted by tall vegetation as they reach lower ground. From the summit, the views are open and panoramic and generally of a semi-rural character with evidence of urban developments, particularly the high rise structures of Shenzhen across the border in the middle and far distance. Generally facing north, north east, the rural Kwu Tung District is clearly visible along with the agricultural land of Long Valley in marked contrast to the Sheung Shui/ Fanling urban area which is evident further east partially blocking the green hills beyond. Valais housing and developments around Hang Tau are other man-made elements at the foot of the hill. The alternative views facing south, south west is similarly mixed, with river channelization work scarring the landscape at the foot of the hill, Lok Ma Chau Border Crossing a distinct complex nearby and a large expanse of open, lowland which stretches to the Pearl River Estuary and is generally green with some housing developments.										
K23	Chau Tau Village	Local	Residential - Low Rise	270	Few	Good	No	No view of NDA area	Long	Rare	Low
	Views east from Chau Tau Village are contained by the village structures and vegetation themselves as well as Lok Ma Chau foothill and Ki Lun Shan. Electricity pylons are also distinct elements running across the view nearby. Most houses actually face south west and many look over a large agricultural plot of land immediately in front of the village but even at the eastern edge of the village looking east, views of the KTN NDA area are not possible due to natural topography and vegetation. These residents are therefore found to be outside the zone of visual influence of the KTN NDA.										

VSR Code	Name	VSR Category/(Strategic/District/ Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good/Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
K24 (just west of F29)	Kei Lak Tsai Footpath in Lam Tsuen Country Park	Strategic	Recreational	2100	Many	Good	Yes	Partial	Medium	Occasional	Medium
There is an open and panoramic view of the KTN NDA to the north west from a high point on the trail along Kei Lak Tsai. Visitors travelling past Wu Tip Shan Lookout further west along the footpath will reach this point. From this elevated location, the northern section of the KTN NDA is screened by the southern foothills of the Tai Shek Mo mountain range. Views are contained by the uplands of the Western Range and Ki Lun Shan to the northwest. Within this view, the open agricultural area of Long Valley and the cottage areas in Kwu Tung such as Ho Sheung Heung and Tung Fong are just visible, but the high rises of Sheung Shui urban area, including Ching Ho Estate, are very prominent to the north of the view. Fanling Highway and Valais are also visible but blend fairly well with Hong Kong Golf Club (Fanling) and the general rural landscape due to their distance from this VSR and landscaping of these built structures.											

12.11.2 Fanling North NDA

The area covered by FLN NDA is around 164 ha and is bound by Fu Tei Au Road to the north, the hill range of Cheung Po Tau, Cham Shan, Wa Shan and Ma Tau Leng to the north-east, Ma Wat River to the east, Sha Tau Kok Road and Ma Sik Road to the south, and Tin Ping Road, Jockey Club Road and Po Wan Road to the south-west with a very small section of the MTRC East Rail line binding it to the west.

The NDA area is bisected by Ng Tung River, which flows along the base of the foothills of the defining hill ranges and is a key characteristic of the FLN NDA. The area is generally of medium landscape value with high value upland areas of Cham Shan and Wa Shan defining one side of the river valley as a green backdrop into which San Wai/Tai Ling Firing Range integrates well. The urban areas of Fanling/ Sheung Shui, with a number of high rise structures and new developments as well as industries such as vehicle repair and material storage, define the other side of the river and the low-lying river flood plains in between are predominantly of a rural nature, with small scale agricultural plots (both active and abandoned) and some scattered residential settlements and isolated buildings and some open storage, which contrasts with the more natural character of the area. Sheung Shui Slaughter House and Shek Wu Hui Sewage Treatment Works are also located in the western area of this NDA, and Sheung Shui Water Treatment Works is located immediately to the north. At the north of Fanling/ Sheung Shui New Town, a number of traditional villages are concentrated, including Sheung Shui Heung, Sheung Shui Wa Shan, Siu Hang Tsuen, Siu Hang San Tsuen and Kan Lung Tsuen, San Wai also lie to the north of the river and are set against the hillside backdrop.

The FLN NDA visual envelope is generally confined to the north and east by the ridgeline formed by the summits of Cheung Po Tau, Cham Shan, Wa Shan and reaching across to the more distant and easterly Tsung Shan and Mau Tau Leng summits. To the south east the foothills of Lung Shan contain the visual envelope while to the southern and western side the visual envelope is contained by the high-rise development of Fanling / Sheung Shui with the mountain range of Tai Shek Mo in the background.

The proposed FLN NDA will be situated in the lowland landscape of the Ng Tung River valley. At lower levels, visual access is severely interrupted by intervening obstacles such as the existing development and vegetation lining the Ma Wat River Channel; that associated with the traditional villages such as Kan Lung Tsuen, Sun Uk Tsuen, Wing Ning Tsuen and Shung Him Tong, and the commercial / industrial development of the On Lok Tsuen area of Fanling. The existing high-rise development of Fanling screens views from the south, whilst views from the west are severely interrupted by the industrial development lining the MTRC East Rail track to Lo Wu and the peripheral development on the fringe of Sheung Shui and Fanling. Low level views from the north are more open, although the existing north of the Ng Tung River floodplain serves to

interrupt views of the development area from locations at the base of the northern mountain ranges.

In consideration of the whole development in its entirety, it should be noted that the likely visual impacts would be apparent at two levels. Firstly, due to the development as a whole, and secondly, due to the individual elements of the project that have been designated within FLN NDA. The visual amenity for each view varies according to a number of factors described in the methodology and the predicted level of visual impact will therefore vary between VSRs.

Table 12.11.3 below details the VSRs in the FLN NDA Study Area. **Figures 12.21.1-30** present photographic records from one location within each VSR, looking towards the relevant NDA. Since access could not be gained for all VSRs, especially for private residential developments, the representative viewing locations may have been adjusted if necessary. The selected viewing point is considered the best alternative that represents the typical view of the VSRs.

Table 12.11.3 - List of the visual sensitive receivers and their sensitivity- FLN NDA (Refer to Figure 12.19.0 and Figure 12.19.1 for VSR/VP locations and Figures 12.21.1-30 for representative photographs of the existing view from a location within each VSR/ VP towards the FLN NDA)

Remarks: The *approximate closest viewing distance to the proposed NDA* is measured from the edge of the VSR group to the closest built structure proposed within the NDA.

VSR Code	Name	Category of VSR (Strategic/ District/ Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
F1	Cottage Area Lining Fu Tei Au Road	Local	Residential - Low Rise	Within NDA (approx. 20 m from closest building)	Few	Good	Yes	Partial	Long	Very Frequent	High
	Many disparate residencies line Fu Tei Au Road and there are many residencies at Hung Kiu San Tsuen. This VSR group's ground level views in most directions are partially blocked by patches of woodland and planted trees along the Ng Tung River banks to the south. The views are characteristically urban fringe and over the top of the foreground vegetation, some high rise buildings of the Sheung Shui /Fanling urban area are visible in the background and in places, the open storage area just south of Ng Tung River in the middle distance.										

VSR Code	Name	Category of VSR (Strategic/District/Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
F2	Existing Settlements around Sheung Shui Wa Shan	Local	Residential - Low Rise	30	Few	Good	Yes	Partial	Long	Very Frequent	High
	There are many scattered residential buildings around Sheung Shui Wa Shan, east of Ng Tung River and contained by the green hills of Cheung Po Tau, Cham Shan and Wa Shan rising up immediately behind the village to the north east. Facing west and south the view is mixed, with agricultural fields and some open storage. The views are partially shielded by planted trees along the river bank and also by vegetation between residential buildings, but the high rise buildings of the Sheung Shui/Fanling urban area are visible in the distance looking towards the NDA. Visually detracting elements include the re-trained Ng Tung River and the existing open storage facilities at the other side of the river which serves as port backup and where many containers are kept.										
F3	Tsung Shan, High Hill	Strategic	Recreational	650	Few	Good	Yes	Full	Medium	Occasional	Medium
	View from Tsung Shan ridgeline, including High Hill, are panoramic with the foothills of Wa Shan partially blocking the views to the south west. From this elevated location, the firing range at the foothill of Tsung Shan is clearly visible immediately below in the foreground, with rural landscape of agricultural fields extending beyond the foothills. In the middle distance the Fanling/ Sheung Shui urban area is distinct with its high rise buildings and in the far distance, facing south west, the peaks of Lung Shan and Kei Lak Tsai are visible. Alternative views to the north and east from this ridgeline are more rural in nature, overlooking Ping Che/Ta Kwu Ling area including some villages and with some of the Shenzhen high rise buildings also visible in the far distance.										

VSR Code	Name	Category of VSR (Strategic/District/Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
F4	Siu Hang San Tsuen	Local	Residential - Low Rise	200	Few	Good	No	Partial	Long	Very Frequent	High
	Views to the north of Siu Hang San Tsuen and Siu Hang Tsuen are contained by the green hills of Tsung Shan rising up immediately behind the villages. To the west views are partially blocked by the foothills of Wa Shan but to the south the view is fairly open. At ground level, vegetation partially blocks the view but at higher elevations, the existing rural landscape of agricultural fields on the far side of Ng Tung River and bisected by Ma Wat River channel characterise the landscape. The high-rise buildings of the Sheung Shui / Fanling urban area are clearly visible in the middle distance serving as a backdrop to this rural area.										
F5	Kan Lung Tsuen Area	Local	Residential - Low Rise	150	Few	Good	No	Partial	Long	Very Frequent	High
	Views from Kan Lung Tsuen and San Uk Tsuen are partially blocked by existing village houses and structures as well as vegetation including trees along the river channel to the north. In green hills of Tsung Shan contain the rest of the view north and Lung Shan contains the view to the south with some high rise buildings of the Sheung Shui/Fanling urban area are visible above the screening vegetation. At higher elevations the existing rural landscape of agricultural fields on the far side of Ma Wat River Channel are more clearly visible although the Sheung Shui/Fanling high rises are still prominent in the background.										
F6	Sha Tau Kok Road	Local	Travelling	Within NDA (Road itself affected. Approx. 20 m from closest building)	Very Many	Fair	Yes	Glimpse	Short	Occasional	Low
	Travellers moving west along Sha Tau Kok Road towards the Fanling urban area have their views fairly contained by the extensive roadside planting. The road is fairly straight, directing the line of sight to the high rise Fanling buildings in the distance. Above the roadside vegetation, there are intermittent views of the roadside development and in the distance the green Tsung Shan ridgeline is visible to the north, Kei Lak Tsai in Lam Tsuen Country Park to the south west and Lung Shan in Pat Sin Leng Country Park to the south east.										

VSR Code	Name	Category of VSR (Strategic/District/Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
F7	Ma Wat Tsuen Area	Local & District	Residential - Low Rise	100 (50 to Ma Wat River Channel Diversion)	Many	Good	Yes	Partial	Long	Frequent	High
	There are a number of villages at the north west base of Lung Shan before Sha Tau Kok Road, such as Ma Wat Tsuen, Tsz Tong Tsuen, Tung Kok Wai, Ma Wat Wai, Wing Ning Wai and Wing Ning Tsuen. The green hills of Lung Shan, rising up to the south of these villages, contains the view and at ground level the view is partially blocked by other village buildings, vegetation and small coppices. At higher elevations, the medium rise commercial / industrial area at On Lok Tsuen is partially visible to the west with the high rise buildings of the Sheung Shui / Fanling urban area clearly visible in the middle distance. Most houses face north or north west and in these directions, the middle distance is characterised by rural village houses and associated vegetation, while in the background the natural uplands of the Wa Shan mountain range and Tsung Shan are visible, with a small number of very high rise structures in Shenzhen in the far distance.										
F8	Shung Him Tong	Local	Residential - Low Rise	400 (60 to Ma Wat River Channel Diversion)	Very Few	Fair	No	Partial	Long	Frequent	High
	Views from Shung Him Tong north west extend over Ma Wat River Channel to the medium rise commercial / industrial area at On Lok Tsuen. The view to the FLN NDA is filtered by existing vegetation in the foreground and certain existing high rise buildings at Fanling are visible above the vegetation, but the proposed Fanling Highway would pass close to this VSR. To the north, the uplands of Wa Shan and Tsung Shan are just visible.										

VSR Code	Name	Category of VSR (Strategic/District/Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
F9	Heritage Trail (South of Sha Tau Kok Road)	Local	Recreational	150 (100 to Ma Wat River Channel Diversion)	Few	Fair	Yes	Partial	Medium	Occasional	Medium
	Views along the Heritage trail change along the route but generally to the west, in the direction of the NDA, they extend over a rural landscape of agricultural fields to Ma Wat River Channel in the foreground. The Lung Shan mountain range dominates the view south east. Looking north, the natural uplands of Wa Shan and Tsung Shan are in the background. The trail is predominantly along low lying ground and at certain points the large medium-rise commercial/ industrial area near On Lok Tsuen is visible, as is Sha Tau Kok Road, but these are often blocked by vegetation and other village structures. The high-rise buildings of Sheung Shui / Fanling urban area are also visible in the background at certain points along the route. In general views along this trail are mixed, being largely rustic at close range and taking in ancient buildings, but with elements of urban development clearly evident in the middle to far distance.										
F10	Po Kat Tsai	Local	Residential - Low Rise	1000	Very Few	Good	Yes	Glimpse	Medium	Frequent	Low
	Views west to the FLN NDA from Po Kat Tsai are limited; in the foreground is an area of wetland bordered by tall, mature woodland. In one direction, the high rise buildings of Belair Monte development are visible. Alternative surrounding views are agricultural in nature with the green hillside of Lung Shan extending up behind the village to the south.										
F11	Belair Monte & Regentville	District	Residential - High Rise	70	Very Many	Good	No	Full	Long	Very Frequent	High
	There are a number of high rise residential buildings in this area including Belair Monte and Regentville. Views at ground level are blocked by buildings and existing vegetation whereas apartments at elevated levels and facing north will have a view towards the proposed FLN NDA. Regentville apartments may have their view partially blocked by other high rise in the vicinity, but Belair Monte apartments are on the edge of the urban development with clear views. Their current view north is very rural and green in nature, with agricultural land interspersed with houses and small village areas and parts of Ng Tung River channel also visible. In the background the green Tsung Shan and Wa Shan hills are evident with wooded lower slopes and shrubland near the summits. Some very high rise buildings in Shenzhen are also visible behind the background hills, in the far distance.										

VSR Code	Name	Category of VSR (Strategic/District/Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
F12	Wing Fai Centre & Wing Fok Centre	Local	Residential - High Rise	70	Very Many	Good	No	Full	Long	Very Frequent	High
	There are a number of high rise residential buildings in this including Wing Fai Centre and Wing Fok Centre. Views at ground level are blocked by existing vegetation whereas flats at elevated levels and facing north will have a view towards the proposed FLN NDA. This view currently is rural and green in nature, with agricultural land interspersed with houses and small village areas and parts of Ng Tung River channel also visible. In the background the green Tsung Shan and Wa Shan hills are evident with wooded lower slopes and shrubland near the summits. Two very high rise buildings in Shenzhen are also visible behind the background hills, in the far distance.										
F13	Fanling Garden	Local	Residential - Low Rise	200	Many	Fair	Yes	Glimpse	Long	Frequent	Medium
	Only the northern units of Fanling Garden have northerly views and these are dominated by the Police Quarters in the foreground and some large trees also partially blocking. This view is contained by the high rise Wing Fok Centre on the north eastern side and the high rise of Noble Hill on the north western side. At the higher elevations, some distant green hills are just seen in the background marked with electricity pylons. Alternative views south are also dominated by high rise buildings, although the hill of Kei Lak Tsai and Lung Shan are just visible from higher elevations. In general the views from Fanling Garden are fairly contained within the complex with only partial views beyond.										
F14	Good View New Village/ Ling Shan Tsuen	Local	Residential - Low Rise	120	Many	Fair	Yes	Partial	Long	Frequent	Medium
	This area is comprised mainly of 3-storey village houses. Those facing north east at Good View New Village have their views partially blocked by tall trees along the Ma Sik Road but otherwise have partial views of a rural landscape on Ng Tung River floodplain area which is agricultural and green with few built structures and Wa Shan in the background. The cement buildings of the incomplete Wu Nga Lok Yeung development are partially visible among this rural landscape in the foreground and serve as a visually distracting element. The blocks of Noble Hill and Wing Fok Centre can be seen in the background to the north west and north east respectively.										

VSR Code	Name	Category of VSR (Strategic/District/Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
F15	Noble Hill	District	Residential - High Rise	100	Many	Good	No	Full	Long	Very Frequent	High
	The lower levels of Noble Hill have views north partially blocked by existing vegetation. Although access was not granted, it is expected that residents at higher levels with a north and north west view have open views to the existing rural landscape of agricultural fields, small villages and cottage areas and partial views of Ng Tung River and its associated vegetation. Cham Shan / Wa Shan would be visible in the background and these hills are characterized by wooded lower hill slopes with the summits of the mountains being covered in shrubland. In general the views towards the NDA area are currently green and rustic.										
F16	Fanling Wai	Local	Residential - Low Rise	420	Many	Fair	Yes	Glimpse	Long	Frequent	High
	Fanling Wai has a fairly dense layout of residences and views are therefore partially blocked by other village structures and vegetation. A limited number of houses face the North District Park to the west and those facing north have their views framed by the high rise blocks of Noble Hill and Wing Fok Centre to the west and east respectively. Views from higher floors are also partially blocked to the north by a small patch of woodland on the other side of the Jockey Club Road to the village. Generally views are limited to within the village area.										
F17	North District Park	Local	Recreational	420	Many	Good	Yes	Partial	Medium	Occasional	Medium
	The North District Park has fairly contained views within the park itself, with tall trees and other landscaped vegetation. It has partial views to the north of the high rise Tin Ping Estate and Noble Hill towers are partially visible to the north west in the background but otherwise not much is currently visible over the tree line.										

VSR Code	Name	Category of VSR (Strategic/District/Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
F18	Ka Fuk Estate Area	District	Residential - High Rise	750	Very Many	Fair	No	Partial	Long	Frequent	High
	Residencies located between Fanling Highway and Pak Wo Road including the high rise Ka Fuk Estate and medium/high rises of Vienna Garden, Cheerful Park etc., for north facing flats at higher elevations, the views are over Sheung Sui/Fanling urban area in the foreground with glimpses of the Wa Shan and Tsung Shan ranges in the background. The foreground views have conspicuous numbers of high rise buildings including Noble Hill, Tin Ping Estate, Wing Fok Centre although the greenery of North District Park and urban landscaping is also evident.										
F19	On Kwok Villa	Local	Residential - Low Rise	120	Many	Good	No	Partial	Long	Very Frequent	High
	The ground level views from On Kwok Villa are largely blocked by existing structures and vegetation. To the north west and south west, Woodland Crest and Tai Ping Estate high rise blocks dominate the view. To the east however, at higher elevations, the views are more open, with glimpses out over the rural landscape of the Ng Tung River floodplain and beyond to the Cham Shan / Wa Shan ranges in the background.										
F20	High Rise Residential buildings around Tin Ping Estate	District	Residential - High Rise	250	Very Many	Good	No	Full	Long	Very Frequent	High
	The Tin Ping Estate spans a large area with a number of residential blocks and Woodland Crest is another high rise residential complex nearby. For those flats in this area facing north east towards the proposed FLN NDA, at high levels the view is generally open and panoramic. Some blocks will have their views north east partially blocked by the towers of Noble Hill and high rise developments are evident in the foreground to middle distance. Ng Tung River and surrounding floodplain dominates the view however, with a rural landscape of agricultural fields, small villages and copious patches of woodland. Green hills are clearly visible in the background, including Tsung Shan range and Lung Shan.										

VSR Code	Name	Category of VSR (Strategic/District/Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Fair / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
F21	North District Sports Ground	Local	Recreational	320	Many	Fair	Yes	Partial	Medium	Occasional	Medium
North District Sports Ground has views north east towards the proposed FLN NDA already containing noticeable high rise buildings such as Woodland Crest, Tin Ping Estate and Tsui Lai Garden. The existing trees along Tin Ping Road also interrupt the low-level view to the north of the facility.											
F22	Tsui Lai Garden	Local	Residential - High Rise	140	Very Many	Good	No	Full	Long	Very Frequent	High
For those flats in Tsui Lai Garden facing north east towards the proposed FLN NDA, at high levels the view is generally open and panoramic. The towers of Woodland Crest are evident in the middle distance to the east but otherwise the view spans out over Ng Tung River and its surrounding floodplain with a rural landscape of agricultural fields, small villages and copious patches of woodland. Green hills are clearly visible in the background, including Wa Shan and Tsung Shan range. The port backup facilities in the foreground to the north are visually detracting elements visible from this location.											
F23	Fung Kai Area	Local	Recreational (& Occupational & Travelling)	170	Many	Fair	Yes	Glimpse	Medium	Occasional	Low
There are some glimpse views east from the Fung Kai area towards the FLN NDA. Users of the playground, students, workers and pedestrians in this area have glimpse views towards FLN NDA to the north and northwest. Currently these are of the existing agricultural fields in the Ng Tung flood plain area with its scattered settlements. These VSRs are generally at ground level and from this level, vegetation screens most low level views, although Cham Shan / Wa Shan ranges can be seen in the distance above the trees.											

VSR Code	Name	Category of VSR (Strategic/District/Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
F24	Sheung Shui Wai Area	Local	Residential - Low Rise	90	Many	Fair	No	Glimpse	Long	Frequent	Medium
	Sheung Shui Wai also known as Sheung Shui Heung comprising Man Kok Village, Ha Pak Tsuen, Wai Loi Tsuen, Mun Hau Tsuen, Chung Sum Tsuen, Sheung Pak Tsuen, Tai Yuen Tsuen, Po Sheung Tsuen and Hing Yan Tsuen has a high density of houses as well as landscaping, meaning most low level views are partially or fully blocked by other houses or vegetation. The area is bordered by a low rise industrial area to the south west but views in this direction are also blocked by mature trees. To the north east of the area, in the direction of FLN NDA, glimpses of the medium rise Fung Kai Secondary School and open storage area are possible from higher elevations of a small number of houses to the north and east of the area. Glimpses of agricultural landscape near Ng Tung River may also be possible, with the continued greenery of the Cham Shan / Wa Shan ranges in the background.										
F25	Industrial Zone SW of Sheung Shui Wai	District	Occupational	520	Very Many	Fair	No	Partial	Medium	Frequent	Low
	This industrial zone has a view east of the traditional village of Sheung Shui Wai in the foreground, partly screened by existing trees. The high rise buildings of Sheung Shui/Fanling are visible over the tree line as well and in the distance the Cham Shan / Wa Shan ranges are visible.										
F26 (K6a)	Ho Sheung Heung	Local	Residential - Low Rise	600	Many	Good	No	Glimpse	Long	Occasional	Medium
	The topography of Tai Shek Mo and Fung Shui Woodland west of Ho Sheung Heung block views to the north and west of this VSR. At ground level most views are blocked by existing built structures and vegetation, including the landscaped trees along the trained Sheung Yue River. Most houses face east, but from elevated viewpoints, such as the higher levels of the three storey houses and the slightly elevated Chung Kuk Path, there are some glimpses through to the FLN NDA area which is relatively far away. In this view, the high-rise buildings of Sheung Shui/Fanling can be seen over the trees in the background.										

VSR Code	Name	Category of VSR (Strategic/District/Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
F27 (K7)	Tsung Yuen	Local	Residential - Low Rise	500	Few	Good	No	Glimpse	Long	Occasional	Medium
	The topography of Tai Shek Mo and trees lining the road, both to the west of Tsung Yuen, block views to the north and west of this VSR. At ground level most views east are blocked by existing tall trees in the foreground. Most houses face east-west, but from elevated viewpoints, such as the higher levels of the three storey houses, views south east, towards the FLN NDA area may include glimpses of the open agricultural land east of the village as well as the Shek Wu Hui Sewage Treatment Works in the background. This view also already includes the high-rise buildings of Sheung Shui/Fanling in the background.										
F28 (K22)	Ki Lun Shan Footpath	Strategic	Recreational	2350	Few	Good	Yes	Partial	Medium	Occasional	Medium
	The footpath up to the summit from the south is largely through grassland with the main screen to the view north being the ridgeline itself. Power pylons are also visually distracting elements close to the footpath. The footpaths on the north Ki Lun Shan are restricted by tall vegetation as they reach lower ground. From the summit, the views are open and panoramic and generally of a semi-rural character with evidence of urban developments, particularly the high rise structures of Shenzhen across the border in the middle and far distance. Generally facing north, north east, the rural Kwu Tung District is clearly visible along with the agricultural land of Long Valley in marked contrast to the Sheung Shui/Fanling urban area which is evident further east partially blocking the green hills beyond. Valais housing and developments around Hang Tau are other man-made elements at the foot of the hill. The alternative views facing south, south west is similarly mixed, with river channelization work scarring the landscape at the foot of the hill, Lok Ma Chau Border Crossing a distinct complex nearby and a large expanse of open, lowland which stretches to the Pearl River Estuary and is generally green with some housing developments.										

VSR Code	Name	Category of VSR (Strategic/District/Local)	Type of VSR	Approximate Closest Viewing Distance to Proposed NDA (m)	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
F29 (east of K24)	Wu Tip Shan Lookout	Strategic	Recreational	1450	Many	Good	Yes	Full	Short	Occasional	Medium
	The path up to Wu Tip Shan Lookout is lined by high shrubland, screening most views, but at the lookout itself, there are open and panoramic views to the north and east. The Sheung Shui / Fanling urban area, with its many high rise buildings and the MTR East Rail line, is prominent in the middle distance, split by greener area comprised to the agricultural land west of Ng Tung River. From this elevation, the hills of Cham Shan, Wa Shan and Tsung Shan are visible behind the urban area, and the view extends to Shenzhen beyond, as well as the NENT landfill and green hills of Wo Keng Shan. The floodplain of Ng Tung River within this view adds to the natural character of the landscape, even though small village areas are visible. The Fanling Highway with Fanling Golf Course and its isolated woodland to the south mark the foreground views.										
F30 (K2)	Tai Shek Mo Footpath & Lookout	Strategic	Recreational	1750	Very Few	Good	Yes	Full	Medium	Occasional	Low
	The main track to the summit of Tai Shek Mo is an old road overgrown with vegetation. It is located on the east side of the hill and the high and thick vegetation along it, as well as the existing topography (Tai Shek Mo spur south), block views to the south and southwest towards the Kwu Tung Area. At the summit, there is a panoramic view and in the background to the southeast the high rise buildings of the Fanling/ Sheung Shui urban area are visible. The Lo Wu Correctional Institution can be seen through vegetation at the base of the hill in this direction, with the Long Valley area agricultural fields clearly visible in the middle distance. Ng Tung River and Sheung Yue River are also visible meandering through the landscape. Alternatively facing north, being right on the Closed Area Boundary and at elevation, there are clear views into China and the high rise urban area of Shenzhen, contrasting starkly with the small rural area of HKSAR at the foot of the hill and south of the border. This track is only accessible by foot and not used frequently. Other trails on the hillside do not appear to be well used either, suggesting very few visitors pass this way and is largely why this VSR has low sensitivity.										

12.12 Visual Impact Assessment

The potential sources of visual impact due to the Project are described in **Section 12.7**. They will create varying levels of visual impact during the construction and operation phases in each NDA, due to factors such as full/ partial blockage of views, degradation of the visual quality of existing views and visual incompatibility with the surrounding visual context. It should be noted that the likely visual impacts may be apparent on two levels; firstly, due to the development as a whole, i.e. the two NDAs, and secondly due to the individual NDAs or elements of the NDAs. The visual impact assessment will consider the Project as a whole, identifying the key sources of impact from each NDA separately as appropriate and considering both NDAs for those VSRs with views to both KTN and FLN NDAs. Further details of separate visual (and landscape) assessments for the Schedule 2 DPs within the NDAs can be found in **DP Packages A-D**.

Magnitude of change and significance of visual impacts are discussed for each NDA in the following **Sections 12.12.1** and **12.12.2**.

12.12.1 Magnitude of Visual Change

The magnitude of visual change is largely dependent on a number of factors as outlined in the methodology. In general, the magnitude of change will reduce the further a VSR is from the Project.

Detailed architectural design of built elements in the NDA is ongoing at this stage of the development programme and therefore the building forms and building mass shown in the photomontages for the NDAs may change as detailed design is refined. The photomontages have been used to help assess magnitude of change for VSRs but it is possible that with further refinement of design (e.g. of building forms, finishes and colours) the built structures will become more compatible with their surrounding environment and actual visual impacts prior to the other suggested mitigation (e.g. soft landscaping), will be reduced.

12.12.1.1 Kwu Tung North NDA

The magnitude of change caused by KTN NDA on VSRs is described for each VSR in **Table 12.12.1**. **Figures 12.18.0** and **12.18.1** show the KTN visual envelope and VSRs/VPs locations with the revised RODP overlaid. They also indicate the suggested noise barrier locations, although these are subject to final refinement. The revised RODP plans in these figures provide the land site numbers which are identified under the column 'Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*' in **Table 12.12.1**.

For clarity, the revised RODP plans are presented with no background details but showing the eight key character areas of the NDA in **Figure**

12.9.0 with the sites' key parameters (e.g. land use type, building height etc) summarized in the tables in **Figures 12.9.1-2**.

As described in **Section 12.5.2**, many principles and concepts have guided the RODP design, and in themselves controlled the magnitude of change brought about by the NDAs. **Figures 12.9.3-5** highlight some of the design measures already incorporated into the revised RODP, showing the urban design context of the original RODP, as well as the other key design considerations such as 'Key Natural and Landscape Features', 'Comprehensive Green Network', 'View Corridors and Breezeways', 'Open Space Network, and 'Buffer Areas'.

Photomontages have been developed from select VPs to help illustrate the visual changes, and these are provided in **Figures 12.22.1-14**. These photomontages show the existing view, the unmitigated view which has helped to determine the magnitude of change rankings, as well as the mitigated views at day 1 and year 10 of operation. The mitigated views help support the findings in **Section 12.12.2.1** which reports on the significance of both unmitigated and mitigated visual impacts.

Three of the VSRs for the KTN NDA assessment have views that will look over both the KTN NDA and the FLN NDA. These are: K2 (F30) Tai Shek Mo Footpath and Lookout; K22 (F28) Ki Lun Shan Footpath, and K24 (not used for FLN assessment) Kei Lak Tsai Footpath in Lam Tsuen Country Park. K15 Choi Po Court/Choi Yuen Estate might have glimpse views of the FLN NDA and two further VSRs have also been used for the FLN NDA visual impact assessment: K7 (F26) Ho Sheung Heung and K6 (F27) Tsung Yuen. All these VSRs are reviewed further in **Section 12.12.1.3**.

Table 12.12.1 - Magnitude of visual change for VSRs due to KTN NDA

Remarks: The approximate closest viewing distance to the proposed NDA is measured from the edge of the VSR group to the closest built structure proposed within the NDA.

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	K1	Ma Tso Lung San Tsuen	Local	D1-14 (G); F1-3 (OU-R&D); G1-4 (G), G1-5 (G)	Partial	20	Intermediate	Fair	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
<p>In general, views at low levels looking south towards KTN NDA are blocked by existing vegetation and built structures, so no noticeable change in view is expected for ground level views in this direction. Many of the sites close to this VSR will experience no change (e.g. Lo Wu Firing Range at G1-1 and G1-2, and green belt at F1-5 and F1-6).</p> <p>From elevated levels (e.g. in the 3-storey houses) and those at the periphery of the village, it is likely that the Research and Development buildings in support of Lok Ma Chau Loop Development in F1-3 (which reach up to 10 storeys high) will be evident over the vegetation and partially block the view. Further south the tops of buildings in the site reserved for government use (D1-14) may be visible through gaps between buildings in F1-3 and existing vegetation; the location of building(s) in D1-14 is currently not available but built structure(s) will be up to 8 storeys high and may cause small changes in visual amenity from elevated viewpoints in the village. Similarly the water service reservoirs in G1-4 and G1-5 may be visible in the background of elevated viewpoints looking southeast. During construction, earthworks and construction machinery will largely be blocked by existing vegetation but scaffolding will become visible above the vegetation. In addition the earthworks associated with the construction of the water service reservoirs in G1-4 and G1-5 may be visible in the distance.</p> <p>Overall, as the existing vegetation and built structures will generally shield low level views to the proposed development, it is anticipated that an <u>intermediate</u> change in view will be experienced during both construction and operation.</p>															
Y	K2a	Tai Shek Mo Footpath & Lookout (Looking towards KTN NDA)	Strategic	A-site high rise buildings in KTN NDA	Partial	380	Small	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Small	Small
<p>For these sections of the footpath with views looking towards the KTN NDA, only a small part of the tops of high rise buildings in KTN NDA will be visible behind the green knoll of Tai Shek Mo. These will not be dissimilar to existing views of high rise buildings in Shenzhen in the distance. This VSR is anticipated to have little discernible change due to KTN NDA during both construction and operation and therefore, the magnitude of change due to KTN NDA will be <u>small</u> during both stages.</p>															
Y	K2b (F30)	Tai Shek Mo Footpath & Lookout (Looking towards KTN & FLN NDA)	Strategic	A-Sites and D-Sites high rise buildings in KTN NDA & Entire FLN NDA	Partial	380 from KTN NDA & 1750 from FLN NDA	Medium	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
<p>For the sections of the footpath with views both to the KTN and FLN NDA, much of the KTN NDA will be blocked by the ridges and foothills of Tai Shek Mo itself and only the tops of high rise buildings in KTN NDA will be visible behind the Tai Shek Mo Ridgeline. Existing views looking down to the Sheung Shui/ Fanling Urban Area, Ng Tung River and Sheung Yue River will remain unchanged by KTN NDA. Much of the KTN NDA area visible to this VSR will experience no discernible change (e.g. Lo Wu Correctional Institution at G1-8; natural vegetation in G1-3; Lo Wu Saddle Club in G1-6 and G1-7; agricultural land in C1-6, C2-2, C2-4 and C2-5; and the majority of Long Valley Nature Park at C1-9). Although the closest built structure in the KTN NDA is approximately 380 m away, this is the service reservoir in G1-4 and is unlikely to be visible immediately below the lookout and blocked by the higher ridges. Most of the KTN NDA structures causing visible change, such as higher rise residential buildings in A-sites and D-sites, are much further away such that only a small change in view is anticipated due to KTN NDA. Most of FLN NDA will be visible to the south east of this VSR in the distance (over 1.7 km away) (also detailed in Table 12.12.2). It will largely blend with the existing urban view of the Sheung Shui/Fanling area but there will be some loss of visual access to greenery and a moderate change in view is anticipated during both the construction and operation phases due to FLN NDA. Visual impacts from the construction phase will generally result from earthworks as well as scaffolding and construction machinery as they become visible in the distance.</p> <p>Overall the existing green ranges in the foreground and high rises in Shenzhen looking to the north in the background will remain unchanged and it is not considered that cumulatively FLN and KTN NDAs confer more than an intermediate change in view at this VSR during construction and operation. Visual impacts from the construction phase will generally result from site formation works, scaffolding and construction machinery that become visible in the distance. Overall the magnitude of change is anticipated to be <u>intermediate</u> during construction and operation.</p>															

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	K3	Western Range -- Lok Ma Chau Footpath	District	F1-3 (OU-R&D); A-Sites & E-Sites in southwest NDA; G1-4 (G), G1-5 (G)	Partial	550	Medium	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		The panoramic view along the footpath looking down to the existing rural agricultural landscape will generally become an urbanized area due to the Project. Built structures such as high rise residential buildings up to 35 storeys at A3-3, A2-2, A1-2 & A2-7 as well as a lower hospital and polyclinic at B2-2, will largely block the existing view of the green lowland beyond the ridgeline and integrate the urbanized view with the small portion of Fanling/Sheung Shui urban area visible on the skyline behind the proposed KTN NDA. The Research and Development buildings in support of Lok Ma Chau Loop Development within F1-3 (buildings up to 10 storeys high), at the foothill of Tai Shek Mo, will not be compatible with the existing agricultural view in that area and also change the view. Visual changes during construction will be similar to during operation with a little additional impact expected from earthworks, scaffolding and installation/operation of construction machinery. Thus the magnitude of change will be <u>intermediate</u> during both stages for this VSR.													
Y	K4	Cottage Area (Western Range)	Local	DP4 Road D1 to D5; A-Sites & E-Sites in southwest NDA; A2-2 (PRH), A3-3 (PRH), A3-6 (R2); E1-2 (E), E1-3 (G), E1-4 (E), E1-5 (G-REC), E1-6 (G); F1-3 (OU-R&D), F1-1 (G-REC)	Partial	20	Medium	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Large	Large
		The cottage area at the eastern foothill of the Western Range will be situated within the boundary of KTN NDA area. Some of the houses will be adjacent to the built structures in the NDA. Houses at the northern part of this VSR will be close to the Sports Ground/Complex at F1-1 with built structures up to 3 storeys high, the Research and Development buildings in support of Lok Ma Chau Loop Development in F1-3 (which reach up to 10 storeys high) as well as the new distributor road. A major change in view is predicted for VSRs in this area due to the proximity of these built structures. For houses at the southern part of the VSR, E1-2 (Primary school with built structures up to 8 storeys high), E1-3 (proposed for district headquarters, district headquarters associated married staff quarters, divisional police station and reprovisioning of Fan Garden Junior Police Officer's quarters, with built structures between 5 and 20 storeys high), E1-4 (proposed for secondary school up to 8 storey tall), E1-5 (proposed swimming pool and sports centre with built structures up to 5 storey tall), and E1-6 (proposed for fire station cum ambulance depot with buildings up to 9 storeys high) will be found to the south eastern side of the area and the high-rise structures of A3-3 and A2-2 (up to 35 storeys tall), A3-6 (up to 20 storeys high) will also be prominent in the background. The existing distant view of the Fanling/Sheung Shui urban area will be blocked by the new development. Although residents at this VSR have their low level views largely blocked by vegetation and existing built structures, a major change in view is still expected. Overall, it is predicted that a major change in view will generally be experienced during both the construction and operation phases. Visual impact from the construction phase will mainly be caused by earthworks, particularly cut and fill for the proposed Sports Ground/Complex at F1-1, filling at E1-2 and cut at E1-6. Erection of scaffolding and installation/ operation of construction machinery will also be apparent both at an immediate distance and from far away. Potential light glare from the construction site during night time operation may also be a source of impact. It is therefore expected that the magnitude of change will be <u>large</u> for both stages for this VSR.													

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	K5a	Northern Knoll of Fung Kong Shan	District	DP4 Road D1 to D5; A3-6 (R2), A3-3 (PRH), A2-2 (PRH); E1-3 (G), E1-4(E), E1-6 (G); E1-7(O); D1-12 (G-REC), D1-13 (G- REC), D1-14 (G); F1-1 (G-REC), F1-3 (OU- R&D); G1-4 (G), G1-5 (G)	Partial	Approx. 70m when looking north; 150m when looking southwest	Medium	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Large	Large
VSRs up at the top of the northern knoll of Fung Kong Shan will generally have all round views with the proposed KTN NDA in sight. For views looking north, the site area reserved for government with buildings up to 8 storeys high (location of buildings yet to be determined) at D-14 is closest, bordering the proposed new 'DP4 Road D1 to D5' at the foot of the knoll and the potential activity centres (up to 5 storeys high) at D1-12 and D1-13 will also be evident at the north eastern foot of the knoll. Research and Development buildings in support of Lok Ma Chau Loop Development in F1-3 (up to 10 storeys high) will be visible and the proposed Sports Ground/Sports Complex (up to 3 storeys high) at F1-1 will also be partly visible also. Further east across the lowland, the construction of the service reservoirs at G1-4 and G1-5 within the green belt site (G1-3) will cause a change in view, especially during construction since significant site formation is necessary. This would involve major earthwork operations to form the level platform for the reservoir areas and permanent removal of the natural hillside, replacing it with slopes and level areas of an engineered and un-natural appearance. Due to the scale of operations the construction works are likely to be visible together with the construction movements to handle the large amounts of cut material taken from the hillside. However views to these reservoir areas are not visible from the entire northern knoll as some are partially obscured by vegetation, higher areas of the knoll and the southern knoll. The tops of built structures at D1-11 (up to 20 storeys high) may also be visible but much of these buildings will be blocked by the southern knoll. A moderate to large change in view is generally expected for these viewing directions at this VSR. For views looking south, the built structures of A3-3 (up to 35 storeys) and A3-6 (up to 20 storeys), will dominate the view. The existing industrial area located at the foothill of the knoll will be converted to an open space and cycle park (E1-7) which is a positive change. The southern knoll of Fung Kong Shan in the foreground will remain unchanged, and the ridgeline of Ki Lun Shan and Wu Tip Shan will still be partially visible in the distance. At certain locations on the knolls, views towards KTN NDA may be partially blocked by the existing vegetation, natural topography and built structures. Changes in views for this viewing direction will vary depending on the viewing location. During construction visual changes will be evident from large cutting earthworks for site formation at G1-4 and G1-5 when building the service reservoirs, cut and fill site formation necessary at F1-1 and at E1-6 as well as D1-12 and D1-13, where a small hill will be removed. During operation the reservoirs at G1-4 and G1-5 are expected to cause less visual impact than during construction, but overall to consider worst case scenario, the magnitude of change will be <u>large</u> for this VSR at construction and operation.															

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y (K5a/ b)	K5b	Southern Knoll of Fung Kong Shan	District	DP4 Road D1 to D5; A2-2 (PRH), A2-4 (HOS), A2-5 (R1c), A2-7 (PRH), A2-9 (R2), A3-3 (PRH), A3-4 (E) A3-6 (R2),; D1-11 (R3), D1-7 (R2) E1-5 (G-REC), E1-6 (G), E1-7 (O); F1-3 (OU-R&D); G1-4 (G), G1-5 (G)	Partial	Approx.70 m	Medium	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Large	Large
		VSRs up at the top of the southern knoll of Fung Kong Shan will generally have all round views that include the proposed KTN NDA. For views north, a very small portion of the Research and Development buildings in support of Lok Ma Chau Loop Development in F1-6 (up to 10 storeys high) will be visible in some areas behind the northern knoll of Fung Kong Shan. The existing industrial area located at the foothill of the knoll will be converted to an open space and cycle park (E1-7) which is a positive change. The view of Lo Wu Rifle Range in the middle distance will remain unchanged but the construction of the service reservoirs at G1-4 and G1-5 within the green belt site (G1-3) and below Tai Shek Mo will cause a change in view, especially during construction since significant site formation is necessary. This would involve major earthwork operations to form the level platform for the reservoir areas and permanent removal of the natural hillside, replacing it with slopes and level area of a engineered and un-natural appearance. Due to the scale of operations the construction works are likely to be highly visible together with the construction movements to handle the large amounts of cut material taken from the hillside. However views to these reservoir areas are not visible from the entire southern knoll as some are partially obscured by vegetation, higher areas of the knoll and the northern knoll. Looking further east, the built structures of D1-11 and D1-7, both for medium density residential up to 20 and 25 storeys respectively, will be visible just at the foothill of the knoll. To the west, the most prominent change will be due to high rise buildings (up to 35 storeys) in to the north of site A3-3 nearby. The fire station cum ambulance depot at E1-6 (up to 9 storeys high) may be visible in this direction. For viewers on the west of the summit as they look down to the adjacent lowland, the school buildings up to 8 storeys high in A3-4 may be visible as well as the swimming pool and sports centre (up to 5 storeys) in E1-5. For views south, the existing Fung Kong Industrial area will become an urbanized and the built structures of A3-6 and A2-9 (both up to 20 storeys), A3-3, A2-2 and A2-7 (all up to 35 storeys), A2-5 and A2-4 (both up to 30 storeys), will dominate the view, changing it from a largely rural context to high-rise urban environment. Overall, it is expected that VSRs at this location will have a large change in view during both the construction and operation phases. Visual impact from the construction phase will mainly be caused by earthworks particularly for the construction of the reservoirs. In addition scaffolding and installation/operation of other construction machinery will cause impacts at this stage. It is therefore expected that at worst the magnitude of change will be <u>large</u> for both stages for this VSR.													
Y (K6b)	K6 (F26)	Ho Sheung Heung	Local	D1-5 (R4), D1-7 (R2), possibly G1-5 (G)	Nil	100	Small	Fair	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		In general, views towards KTN NDA at this VSR are blocked by the natural topography in the area. Most of the adjacent land will remain unchanged (e.g. D1-8 green belt) and no discernible change in view is anticipated for the majority of these VSRs. However, residents at the southern portion of Ho Sheung Heung will be adjacent to a site (D1-5) proposed for village resite (up to 3 storey buildings) and will have views above the vegetation of some of the new buildings (up to 25 storeys) in the adjacent D1-7 which will cause a greater change in view than experienced by most residents in other areas of the village. There is a chance that some VSRs in this area may be able to see the proposed freshwater service reservoir in G1-5, but the trees lining Chung Kuk Path behind the village will act as a screen protecting most ground level views up to this. Overall, it is expected that on average, most VSRs will experience a small change in view during both the construction and operation. Visual impact from the construction phase will mainly be caused by scaffolding, installation/operation of construction machinery, and the potential light glare from the construction site during night time operation and it is anticipated that minimal site formation works will be visible. To reflect the worst change in view experienced by viewers close to the high rise buildings in D1-7 the magnitude of change is considered to be <u>intermediate</u> for both stages for this VSR.													
Y	K7 (F27)	Tsung Yuen	Local	Possibly G1-5 (G)	Nil	300	Small	Good	Good	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
		(Note K7a is the same location as F27, but different view) Most views towards the KTN NDA are blocked by the natural topography in the area, and no discernible change in view is anticipated during both the construction and operation stages. However, there is a chance that some VSRs at the north of the village may be able to see the proposed freshwater service reservoir in G1-5, but the trees lining Ho Sheung Heung road behind the village will act as a screen protecting most ground level views up to this. Therefore, the magnitude of change is expected to be <u>small at worst</u> and more likely to be negligible for this VSR.													

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	K8	MTR East Rail line north of Sheung Shui cycle track	Local	Eastern portion of the KTN NDA; Possibly G1-5 (G)	Partial	750	Small	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Small	Small
		Intermittent glimpses of the proposed KTN NDA may be visible for viewers on the train, through the track side vegetation. The majority of the proposed NDA will be screened by the Long Valley which is reserved for a Nature Park (C1-9) or will be left as agricultural land (C1-6, C2-2, C2-4). The knoll reserved as green belt (D1-8) and the Tai Shek Mo range will also block views to KTN NDA for this VSR although the water reservoir at G1-5 may be faintly visible in the distance. As VSRs will be travelling at high speed and the NDA is located at a distance, it is predicted that only a very small change in view may be experienced in the operation stage, when some structures in the NDA may be visible through/above the existing vegetation. Visual impact from the construction phase will generally result from the erection of scaffolding and possibly installation/operation of some construction machinery such as cranes in the distance. It is therefore expected that travellers on the MTR will have a <u>small</u> change in view in the middle distance during both construction and operation.													
		K9	Long Valley Villages	Local	DP3 Road P1, P2 and DP5 New sewage pumping stations (SPS) B3-5 (OU-C,R&D), B3-8 (OU-C,R&D), B3-12 (OU-C,R&D); C1-3 (CDA) A1-9 (R2), D1-7 (R2), Possibly G1-5 (G)	Partial	70	Medium	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Intermediate
In general, VSRs at this location are expected to have an intermediate change in view when looking west during the operation stage as the existing rural landscape will become an urbanized town in the middle distance, but the open panoramic view of the Long Valley agricultural land in the foreground and view to the Tai Shek Mo range in the background will remain unchanged although the water reservoir at G1-5 may be faintly visible in the distance. The commercial research and development buildings (up to 10 storeys high) of B3-5 and B3-8, and B3-12 will be visible reasonably close by on the other side of the new DP3 road. Residential blocks up to 20 storeys high in A1-9 and 25 storeys high in D1-7 may also protrude into the skyline in the middle distance. An intermediate level of visual impact is also predicted from the construction phase, with the erection of scaffolding become visible in the distance but no major earthworks visible. The villagers of Yin Kong in C1-4, may be affected during construction by the separate project for a commercial development around Enchi Lodge, including village houses up to 3 storeys and a one storey car park, but this is similar to the existing village and compatible.															
Overall the magnitude of change is predicted to be <u>intermediate</u> during both construction and operation in this area.															
Y	K10	Cycle track along riverside near Long Valley	Local	DP3 Road P1, P2 and DP5 New SPS B3-8 (OU-C,R&D), B3-2 (OU-C,R&D), B3-5 (OU-C,R&D), B3-12 (OU-C,R&D); A1-9 (R2), A2-7 (PRH), A2-9 (R2), A3-3 (PRH); D1-2 (OU-RAF), D1-5 (R4) D1-7 (R2), Possibly G1-5 (G)	Partial	70	Large	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		Views along the cycle track will vary from open agricultural landscape further north to the more built environment at the southern portion of KTN NDA. Hotel and conference facilities and post office up to 10 storeys tall (B3-8) and other commercial, research & development buildings up to 10 storeys tall (B3-2, B3-5, B3-12), residential buildings up to 20 storeys high (A1-9, A2-9), up to 35 storeys high (A2-7, A3-3) and up to 25 storeys high (D1-7) will dominate the view at the southern part of Sheung Yue River looking west from the cycle track. The village type development (up to 3 storeys high) at D1-5 may also be visible through breaks in the vegetation and the water reservoir at G1-5 may be faintly visible in the distance on the Tai Shek Mo foothill. Although trees are planted along the embankment and screen most of the views at ground level, it is expected that a large portion of these built elements will still become visible above the vegetation line, especially for those that are adjacent to the cycle track (mainly commercial, research and development). To the east of the cycle track however, the Long Valley area will largely be preserved in C1-9 and C1-6 and no change in view is anticipated. Visual impact from the construction phase will generally result from some site formation fill work on the other side of the river channel, scaffolding, installation/operation of construction machinery, and potential light glare from the construction site during night time operation. Therefore, the magnitude of change is expected to be <u>intermediate</u> during both construction and operation.													

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
	K11	Cycle track west of Shek Wu Hui Sewage Treatment Works	Local	DP8 Po Shek Wu Interchange Improvement; D1-5 (R4), D1-7 (R2), A2-9 (R2), A1-9 (R2); B3-8 (OU-C,R&D), B3-12(OU-C,R&D); Possibly G1-5 (G)	Partial	500	Small	Fair	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
Views along the cycle track will vary from open agricultural landscape to the a more built environment, when travelling from north to south and vegetation such as trees planted along the embankment of Shek Sheung River or in the adjacent land, will partially screen low level views. Higher levels of the high and medium rise residential blocks in A1-9, A2-9 (up to 20 storeys high), and D1-7 (up to 25 storeys high) and commercial, research and development buildings in B3-8 and B3-12 (up to 10 storeys high) are likely to become visible above the existing vegetation line as viewers head south, but these would be in the distance as the whole Long Valley ‘Nature Park’ at C1-9 will act as a buffer between the cycle track and KTN NDA development although the water reservoir at G1-5 may be faintly visible in the distance. As most views of the proposed KTN NDA at this VSR will be shielded by vegetation, only a small change is expected in terms of visual amenity during the construction and operation stages. Visual impacts from the construction phase will mainly be caused by scaffolding and possibly construction machinery installation/ operation (such as cranes) in the distance. The magnitude of change will be <u>small</u> during both construction and operation.															
	K12	Tsung Pak Long	Local	DP1 San Tin Highway and Fanling Highway; A1-6(R1c), A1-8 (HOS), A1-9 (R2), A2-7 (PRH), A2-9 (R2); B3-5 (OU-C,R&D), B3-8 (OU-C,R&D), B3-12 (OU-C,R&D); Possibly G1-5 (G)	Nil	570	Small	Fair	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
Views looking towards the proposed KTN NDA are largely contained by the existing tall trees planted in and around the village, and most houses to not face in the direction of KTN NDA. At higher levels of the houses, the top floors of the high rise buildings in the KTN NDA, such as in A1-9, A2-9 (up to 20 storeys high), A1-6, A1-8 (up to 30 storeys high), A2-7 (up to 35 storeys high) may become visible and possibly the tops of commercial, research and development buildings (up to 10 storeys) in B3-5, B3-8, B3-12), but these would be in the distance as the whole Long Valley ‘Nature Park’ at C1-9 will act as a buffer between this village and KTN NDA development. Also in the far distance the topographical changes to cut out the reservoirs at G1-4 and G1-5 may also be visible to this VSR. As views of the proposed KTN NDA at this VSR will be largely shielded by vegetation, only a small level of change is expected in terms of visual amenity during the construction and operation stages. Visual impacts from the construction phase will mainly be caused by scaffolding and possibly construction machinery installation/ operation (such as cranes) in the distance. The magnitude of change will be <u>small</u> during both construction and operation.															
	K13	Industrial Zone northeast of Tsung Pak Long	District	Entire area of KTN NDA and associated DPs, particularly DP1 San Tin Highway and Fanling Highway, and DP8 Po Shek Wu Interchange Improvement	Partial	820	Large	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
The proposed KTN NDA will become visible in the panoramic view, behind the agricultural fields of the Long Valley, which is designated to be a Nature Park. The view is expected to change during both the construction and operation stages, due to the general mass of built elements becoming visible above the existing vegetation and changing much of the rural landscape in the Kwu Tung area. Visual impacts from the construction phase will mainly be caused by earthworks, as well as scaffolding and construction machinery installation/ operation in the distance. In the distance the topographical changes to cut out the reservoirs at G1-4 and G1-5 may also be visible. Noting the VSR is of occupational use and the industrial buildings within this area have limited windows facing the direction towards the KTN NDA as well as the distance from the NDA, the magnitude of change is anticipated to be <u>intermediate</u> for both construction and operation.															

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
	K14	Tai Tau Leng	Local	DP1 San Tin Highway and Fanling Highway and DP8 Po Shek Wu Interchange Improvement	Nil	1000	Small	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
Views looking towards the proposed KTN NDA are largely screened by the vegetation around the village, the wooded knoll to the west (C1-5 designated to remain as green belt) as well as Tsung Pak Long village. The village is also at least 1 km from the nearest proposed structures of KTN NDA and houses do not, in general, directly face the KTN NDA area. It is anticipated that no discernible change in views will generally be experienced during both construction and operation phases due to the KTN NDA although some change is likely due to DP1 and DP8. The magnitude of change due to the KTN NDA is anticipated to be <u>negligible</u> in both stages.															
Y	K15	Choi Po Court/Choi Yuen Estate	District	Entire area of KTN NDA and associated DPs, particularly DP1 San Tin Highway and Fanling Highway, and DP8 Po Shek Wu Interchange Improvement	Partial	1050	Medium	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
For elevated views at this VSR, the entire area of the KTN NDA will be visible in the middle distance but this only affects a moderate extent of the existing panoramic view. The industrial zone and the MTR East Rail line will still be the prominent features in the foreground at this VSR, as well as the view of the rural landscape of Tai Tau Leng and Tsung Pak Long, and the open agricultural fields of Long Valley which will all remain unchanged. In the distance, the high rise structures in Shenzhen will still be visible behind the Tai Shek Mo range. However the general mass of the KTN NDA will be visible, especially the higher buildings, and in the distance the topographical changes to cut out the reservoirs at G1-4 and G1-5 may also be visible, so an intermediate change in view is predicted. For VSRs at lower levels, it is expected that the change in view will be much smaller as their views to the NDA may be obstructed by existing vegetation and other built structures in the neighbourhood. Visual impacts from the construction phase will mainly be caused by earthworks, scaffolding and construction machinery installation/ operation in the distance. Overall, it is predicted that an <u>intermediate</u> change will be experienced at this VSR during both construction and operation.															
	K16	Tai Ping Area High Rise Residential Blocks	District	Entire area of KTN NDA and associated DPs, particularly DP1 San Tin Highway and Fanling Highway, and DP8 Po Shek Wu Interchange Improvement	Partial	1000	Medium	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Small	Small
Generally, only residents that are at high levels facing west and north west will have views towards KTN NDA. Where not blocked by Choi Yuen Estate in front, it is expected that the built elements of the NDA will be visible in the middle distance, behind the green Long Valley area. Distant views of high-rises buildings in Shenzhen will still be visible behind the Western Ranges and Tai Shek Mo. As the proposed NDA is also located at a distance from this VSR and much of the view falls outside the NDA and will not be changed by it (e.g. Hong Kong Golf Club), it is anticipated that only small changes will be experienced during both the construction and operation phases. In the distance the topographical changes to cut out the reservoirs at G1-4 and G1-5 may be slightly visible, mostly at construction, and other visual impacts at the construction phase will be caused by scaffolding and construction machinery operation. Therefore, the magnitude of change will be <u>small</u> during both construction and operation.															
	K17	Hong Kong Golf Club, Fanling	Local	None	Nil	350	Small	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
As this VSR is located on low lying ground with extensive landscaping including trees within and around the area of the golf course, views to the proposed KTN NDA will be completely shielded by the existing vegetation. It is therefore anticipated that no discernible change in views will be experienced during both construction and operation phases. Hence, the magnitude of change will be <u>negligible</u> in both stages.															

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	K18	Ascot Park Area	Local	DP1 San Tin Highway and Fanling Highway; B3-2 (OU(C,R&D), B3-12 (OU(C,R&D)	Nil	225	Small	Fair	Good	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
		This VSR represents residents in low rise developments around Kam Tsin, including Kam Tsin Tsuen, Ascot Park, Royal Oaks and La Regent Park. Buildings in this area are located on the low lying ground in clusters and low level views looking towards the proposed KTN NDA are largely blocked by existing vegetation, built structures, screen planting along the roads in the area and the Fanling Highway located just to the north. At elevated levels of most of the 3-storey houses, views to the proposed KTN NDA may also be screened by the existing vegetation, other buildings and the highway such that only a few houses may have a slightly open view looking towards the NDA. It is anticipated that only the tops of some higher structures in the southern KTN NDA, such as the commercial, research and development building in B3-2 and B3-12 (up to 10 storeys high) and residential blocks in D1-7 (up to 25 storeys high) may be visible and at worst cause a small change in view in anticipated. Change will be the same at construction and operation and is considered <u>small</u> .													
Y	K19	Existing Road Bridge Link over Fanling Highway	Local	DP1 San Tin Highway and Fanling Highway; DP2 Castle Peak Road Diversion; Southern A-Sites; B-Sites.	Full	50	Large	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Large	Large
		This VSR represents views travelling along Fanling Highway and Castle Peak Road, whether by vehicle or on foot. Currently travellers along the Fanling Highway and Castle Peak Road have their view contained by the roadside vegetation but noise barriers are proposed along this section within KTN NDA and will change these views. The noise barriers are at least 5m vertical, some with additional 3m cantilever and a proposed full enclosure of approximately 190 m length connecting to a proposed semi enclosure of approximately 110 m length (all approximately 7.5 m high) proposed over Fanling Highway just north of the current Europa Garden Phase 1. Along with the changes caused by the DPs, the magnitude of change is considered large for these viewers. For the small number of pedestrians using the footbridge it is anticipated that a large change in visual amenity will also be experienced. To the north west, the high rise residential blocks of in A sites (rising to between 20 and 35 storeys), and the hospital at B2-2 (up to 10 storeys), schools at B2-5, B2-6 and B2-7 (up to 8 storeys), social welfare facilities and sports complex at B2-8 (up to 10 storeys), a CDA development at B2-10 (up to 20 storeys), the commercial, research and development buildings (up to 10 storeys) at B sites, will protrude above the existing vegetation line of the roadside planting. In addition, the glimpse views of the Western Range in the background will also be blocked by the new structures. Some view corridors along e.g. B2-13 and B2-9 designated for open space. Visual impact from the construction phase will generally result from any tree removal associated with the works, noise barrier erection, scaffolding, installation/operation of construction machinery, and potential light glare from the construction site during night time operation. Overall the magnitude of change is expected to be <u>large</u> for both construction and operation.													
	K20	Valais & Europa Garden New Residential Development Area	Local	DP1 San Tin Highway and Fanling Highway; Southern A-sites; B-sites.	Partial	150	Small	Fair	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
		Low level views at this VSR looking towards the proposed KTN NDA are completely blocked by the existing planted trees along the road and Fanling Highway as well as some areas where tall noise barriers already exist along Fanling Highway. The construction of some new noise barriers, (including the proposed full enclosure of approximately 190 m length connecting to the proposed semi enclosure of approximately 110 m length (all approximately 7.5 m high), just north of Europa Garden Phase I, as well as adjoining proposed single-leaver cantilever noise barriers up to 5 m high with a 3 m bend), may cause some change in view as they are constructed. There are some tall vertical noise barrier walls in front of Europa Garden and Valais already, protecting these residencies from the traffic noise so at operation the new noise barriers will be fairly compatible with the existing view. Residents with views that could look over the existing and proposed noise barriers and vegetation may have partial views of the proposed KTN NDA. It is generally predicted, however, that a large amount of the visual impacts caused by the proposed NDA will be screened from VSRs in this area. Should the tops of any high rise structures be visible above screening elements in the foreground for these views (e.g. the residential blocks of A Sites (rising to between 20 and 35 storeys), and commercial, research and development buildings at B Sites (all up to 10 storeys), these are not predicted to cause large changes to the view. Therefore the magnitude of change is considered to be <u>small</u> for both construction and operation stages.													

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
	K21	Kwu Tung Service Reservoir	District	Entire area of KTN NDA and associated DPs	Partial	300	Medium	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Small	Small
		The entire area of KTN NDA will be partly visible in the middle distance for this VSR. The open panoramic view to the east, and distant view of Tai Shek Mo will remain largely unaffected although in the distance the topographical changes to cut out the reservoirs at G1-4 and G1-5 may also be slightly visible. The views down to the residential developments including Europa Garden and Valais will remain unchanged in the foreground. Since the path up to the reservoir is surrounded by quite dense vegetation, only glimpse views through the vegetation to the overall KTN NDA are predicted. Visual changes during construction will mainly be caused by the earthworks, scaffolding and installation/ operation of construction machinery in the distance. Overall the magnitude of visual change will be <u>small</u> during both construction and operation.													
Y	K22 (F28)	Ki Lun Shan Footpath	Strategic	Entire area of KTN NDA and associated DPs	Partial	650	Medium	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		The entire area of KTN NDA will be visible to this VSR at high levels, turning the existing flat rural landscape currently existing in the KTN area, into an urbanized town area. The existing open view looking over the green ranges in the foreground, residential development and Sheung Shui/ Fanling urban area in the background to the east, and high rise buildings in Shenzhen in the far distance will remain unchanged. To the north of the NDA and more distance in this view, the Research and Development structures in support of Lok Ma Chau Loop Development within F1-3 (up to 10 storeys high) will be visible as the main higher structures in that area, whereas closer the higher rise blocks of A Sites (between 20 and 35 storeys) and B Sites (all up to 10 storeys, with one site up to 20 storeys) will form the main bulk of buildings that cause visual change. Visual impacts from the construction phase will result from general earthworks throughout the NDA, scaffolding and installation/ operation of construction machinery in the distance. Overall, the magnitude of change is anticipated to be <u>intermediate</u> for both stages at this VSR.													
	K23	Chau Tau Village	Local	None	Nil	270	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Negligible	Negligible
		As Chau Tau village residents' views are blocked by other village structures, vegetation and natural topography to the east of the village, general views in this VSR are limited to within the village area and KTN NDA is not predicted to be visible at all. It is therefore anticipated that no discernible change will be experienced in terms of view during both construction and operation stages. The magnitude of change due to KTN NDA will therefore be <u>negligible</u> during construction and operation.													
Y	K24	Kei Lak Tsai Footpath in Lam Tsuen Country Park	Strategic	Entire area of KTN NDA and associated DPs	Partial	2100	Medium	Poor	Poor	Temporary [Medium]	Permanent	Reversible	Irreversible	Inter media te	Intermediate
		The entire KTN NDA will be visible in the distance and given the closest structures are over 2km away, KTN NDA will not be highly visible and individual buildings may not be distinguishable. It will however, differ from the existing largely low-rise and green rural character of the view in this direction and it is anticipated that an intermediate change in view will be experienced during both the construction and operation phases. Visual impacts from the construction phase will generally result from earthworks, scaffolding and installation/ operation of construction machinery in the distance. Therefore, the magnitude of change is anticipated to be <u>intermediate</u> for both phases.													

*Code	Land Use Type
A	Amenity
AGR	Agriculture
C	Commercial
CA	Conservation Area
CDA	Comprehensive Development Area
E	Education
G	Government
G(REC)	Government Recreation
GB	Green Belt
HOS	Home Ownership Scheme
IC	Institution / Community
O	Open Space
OU(C,R&D)	Other Specified Uses - Commercial, Research & Development
OU(DCS)	Other Specified Uses - District Cooling System

OU(FR)	Other Specified Uses - Firing Range
OU(NP)	Other Specified Uses - Nature Park
OU(PFS)	Other Specified Uses - Petrol Filling Station
OU(POFEFTS)	Other Specified Uses - Parking and Operation Facilities for Environmentally Friendly Transport System
OU(R&D)	Other Specified Uses - Research & Development
OU(RAF)	Other Specified Uses - Railway Associated Facilities
OU(RCP)	Other Specified Uses – Refuse Collection Point
OU(SPS)	Other Specified Uses - Sewage Pumping Station
OU(STW)	Other Specified Uses - Sewage Treatment Works
OU(VC)	Other Specified Uses - Visitor Centre
OU(VMCCS)	Other Specified Uses - Vegetable Market and Credit Co-operative Society
PRH	Public Rental Housing
PRH(Local Rehousing)	Public Rental Housing (Local Rehousing)
R1	Residential Zone 1 - highest density
R1(With Commercial)	Residential Zone 1 - highest density - with commercial
R2	Residential Zone 2 - medium density
R2(With Commercial)	Residential Zone 2 - medium density - with commercial
R3	Residential Zone 3 - low density
R4	Residential Zone 4 - very low density
RR4	Rural Residential (lower density & building height than R) – lowest density
V	Village Type Development

12.12.1.2 Fanling North NDA

The magnitude of change caused by FLN NDA on VSRs is summarized in **Table 12.12.2**. **Figures 12.19.0 and 12.19.1** show the FLN visual envelope and VSRs/VPs locations with the revised RODP overlaid. They also indicate the suggested noise barrier locations, although these are subject to final refinement. The revised RODP plans in these figures provide the land site numbers which are identified under the column ‘Key Designated Projects (DPs)/Sites with Structures causing Visual Impact (Land Use Type)*’ in **Table 12.12.2**.

For clarity, the revised RODP plans are presented with no background details but showing the four key character areas of the NDA, in **Figure 12.10.0.1-2** with the sites’ key parameters summarized in **Figures 12.10.1-2**.

As described in **Section 12.5.2**, many principles and concepts have guided the revised RODP design, and in themselves controlled the magnitude of change brought about by the NDAs. **Figures 12.10.3-5** highlight some of the design measures already incorporated into the revised RODP, showing the urban design context of the original RODP, as well as the other key design considerations such as ‘Key Natural and Landscape Features’, ‘Comprehensive Green Network’, ‘View Corridors and Breezeways’, ‘Open Space Network, and ‘Buffer Areas’.

Photomontages have been developed from select VPs to help illustrate the visual changes, and these are provided in **Figures 12.23.1-16**. These photomontages show the existing view, the unmitigated view which has helped to determine the magnitude of change rankings, as well as the mitigated views at day 1 and year 10 of operation. The mitigated views help support the findings in **Section 12.12.2.2** which reports on the significance of both unmitigated and mitigated visual impacts.

Two of the VSRs for the FLN NDA assessment have views that will not only take in the FLN NDA but also have views of the KTN NDA. These are: F28 (K22) Ki Lun Shan Footpath; and F30 (K2) Tai Shek Mo Footpath and Lookout, and the overall visual change brought about from both FLN and KTN NDAs are further reviewed in **Section 12.12.1.3**. Two further VSRs have also been used for the KTN NDA visual impact assessment: F26 (K7) Ho Sheung Heung and F27 (K6) Tsung Yuen.

Table 12.12.2- Magnitude of visual change for VSRs due to FLN NDA

Remarks: The approximate closest viewing distance to the proposed NDA is measured from the edge of the VSR group to the closest built structure proposed within the NDA.

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
								Description of Impacts during Construction and Operation							
	F1	Cottage Area Lining Fu Tei Au Road	Local	DP7 Utilization of Treated Sewage Effluent; DP9 Fanling Bypass Western Section; DP11 SWHSTW – Further Expansion; DP13 New SPS A1-2(G), A1-5(A), A1- 6(OU-SPS), A1-8(G)	Partial	Within NDA (approx. 20m from closest new building)	Small	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
		Many of the cottages in this VSR lie within the NDA and some may be removed e.g. at site A1-8 designated for a Police Driving and Traffic Training Complex where extensive cut and fill is required for site formation.													
		For those VSRs remaining in this area, many lie in or partly in A1-3 and A1-9, which are designated to remain unchanged as ‘Agricultural’ and the Man Ming Temple in A1-4 will also remain unaffected. The peripheral cottages will, however, be adjacent to two small sites proposed for a future pumping station for Sheung Shui Water Treatment Works(A1-2) (likely to be approximately 5 m high); and a sewage pumping station up to 5 m high (A1-6). Eastern cottages will be adjacent to the Police Driving and Traffic Training Complex with buildings in A1-8 which will reach up to 7 storeys high and will cause the most change the current view. On the other side of Ng Tung River from these cottages, the proposed and upgrading of SWHSTW expansion at A2-3may be visible to cottages near the river but A1-5 is designated as ‘Amenity’ and planting along the river cycle path may partially block these views. Low level views in most directions are generally blocked by existing patches of woodland and vegetation, and therefore low-level views of the proposed new developments will be screened. Given some buildings may rise to seven storeys near some cottages, the tops of these buildings are likely to be visible close by and there will be some changes to views from some cottages. Views to the south of Ng Tung River further away will be shielded by planted trees along the river banks and the high rise structures of Sheung Shui/Fanling urban area will remain visible in the background. During construction earthworks, particularly site formation in A1-8, and construction machinery will largely be blocked by existing vegetation but scaffolding will become visible above the vegetation. It is anticipated that on average small changes will be experienced during both construction and operation and the magnitude of change will be <u>small</u> for both phases.													
Y	F2	Existing Settlements around Sheung Shui Wa Shan	Local	DP9 Fanling Bypass Western Section, D13 New SPS; A1-11(G), A3-1(G); B-Sites	Partial	30	Medium	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Large	Large
		These VSRs are likely to see the residential blocks south of Ng Tung river as the most visible new structures. Those closest to the river and about 150m across the water from the closest VSR, rise up to 25 storeys (e.g. the first line of buildings in B2-6, B2-11, B3-2), and taller buildings reaching up to 35 storeys will be visible behind these (e.g. in B2-7, B2-12 and B3-3). These new structures will block the existing view to Tsui Lai Garden which is currently visible in the skyline and only a small portion of the existing view to the Sheung Shui urban area will remain visible. Many of the new buildings lie on the open storage facilities for keeping containers to the south of Ng Tung River that is currently diminishing the visual amenity in the area, and could be said to improve this area although the structures will be higher than currently, and therefore more visible. Part of this open storage area is due to be rezoned for open space near to the river (B2-1, B2-8, B2-10, B3-1), so visual quality here is predicted to improve. Some of these sites will fall partially on land that is currently agricultural or marsh however, so the land will be irreversibly converted and any views to these areas are expected to diminish in quality.													
		Additionally residential buildings north of the river on the same side as these VSR may be visible. New residential buildings in B1-7 will rise up to 15 storeys and those in B1-9 up to 12 storeys and are likely to be visible to those settlements facing south and south east. 3 storey houses in B1-8 may also be visible to VSRs close to this site. This area is currently agricultural or wooded so will undergo large change and given the potential proximity of the closest VSRs, they will likely experience a large change in view. The new Fanling Bypass Western Section (DP9) and its interchange will also pass by fairly close to some of these settlements. Much of this land is currently rural in nature and these viewers will be affected by filling in of a river meander in A1-11 and the earthworks and construction of the at grade bypass but at operation since the bypass is at grade the change of view is likely to diminish as it is screened from lower levels by natural vegetation.													
Apart from earthworks required to build the Fanling Bypass Western Section, the cut works required to construct the Fresh Water Service Reservoir at A3-1 may also be visible in the distance during construction, but will not be prominent. Otherwise no significant earthworks will be visible for the main NDA area during construction and the main impacts at this stage will be from construction machinery and scaffolding and then the built structures as they become visible. Given some screening by existing vegetation among the residential buildings, and some amenity planting and open space buffering along the river (e.g. in B1-2, B1-5 and B-10), the key change is likely to be from the high rise structures in B-Sites protruding into the skyline. It is anticipated that the magnitude of change will be <u>large</u> during both construction and operation.															

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	F3	Tsung Shan, High Hill	Strategic	DP9&10 Fanling Bypass Western & Eastern Sections; B-Sites, C-Sites and D-Sites	Partial	650	Medium	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		Part of the existing view to high rise buildings in the Fanling/Sheung Shui urban area will be blocked in the middle distance for these recreational VSRs, by the built structures in B and D Sites, mainly for residential buildings up to 12 (e.g. B1-9), 20 (e.g. B1-7, B3-9, D2-2, D2-4) , 25 (e.g. D2-6) and 30 (e.g. D2-9) storeys high. Some public housing reaching up to 35 storeys high may be visible behind in the distance (e.g.B2-12, B3-3) and some higher residential blocks in D-sites behind lower buildings near the river (e.g. D3-1b, D3-3, D3-4. The Fanling Bypass will also become visible to these recreational VSRs in the middle distance. The peaks of Lung Shan and Kei Lak Tsai will still be visible in the distance and other existing views looking down towards the firing range and the rural area around Siu Hang San Tsuen will also be unaffected by the proposed FLN NDA. As the FLN NDA is located at a distance from the VSR, it is anticipated that the VSR will only experience an intermediate change in view in the operation phase. Only an intermediate change in view is also predicted during the construction phase, when scaffold and construction machinery may be visible above the ridgeline of Wa Shan. Therefore the magnitude of change will be <u>intermediate</u> for both construction and operation.													
	F4	Siu Hang San Tsuen	Local	DP10 Fanling Bypass Eastern Section; D- Sites	Partial	200	Medium	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		In general, views at ground level in the village will be partially shielded by existing vegetation and no major change in view is expected at this level. However, for elevated views looking to the south towards the proposed FLN NDA , the residential buildings in D2-9 (up to 35 storey high), D2-4 (up to 20 storeys) and D2-6 (up to 25 storeys) and possibly D3-3, D3-4, D3-7 (all up to 30 storeys), will block the existing view of the high-rise buildings in the Sheung Shui/Fanling urban area and the existing view of agricultural fields on the far side of Ng Tung River will become urbanized. Some of this agricultural area is designated for open space use (e.g. D2-8, D2-10) and in conjunction with the agricultural land to the north of Ng Tung River outside the NDA boundary, will act as a buffer before the high rise buildings. The Fanling Bypass Eastern Section (DP10) will also be visible to these VSRs, being elevated in their view. A view corridor along D2-7and D2-8, and along D2-5 and D3-5, linking this area to the Sheung Shui/Fanling urbanised area behind, is maintained with the current NDA design giving some visual relief from the new building massing. Some relief is also provided by the stepped building heights and the fact that the agricultural land immediately to the south will remain unchanged. During construction, earthworks, scaffolding and construction machinery may be visible in the distance and overall it is anticipated that the magnitude of change will be <u>intermediate</u> for both construction and operation.													
Y	F5	Kan Lung Tsuen Area	Local	DP10 Fanling Bypass Eastern Section, DP12 Reprovision of Temporary Wholesale Market at D1-6; D- Sites	Partial	150	Large	Poor	Poor	Temporary [Short]	Permanent	Reversible	Irreversible	Large	Large
		Views looking at the open agricultural area to the west of the VSR will be changed by high-rise buildings up to 35 storeys high (D2-9), medium density residential buildings up to 20 storeys high (D2-12), as well as the reprovisioning of the existing North District Temporary Wholesale Market for Agricultural Products (DP12 at D1-6). Views looking north to the foothills of Wa Shan will remain unaffected. Although bamboo is planted along the south-western boundary of Kan Lung Tsuen as a visual buffer between FLN NDA, the mass of new buildings in the NDA will still generally still dominate the view, being fairly close to this VSR. The new elevated Fanling Bypass Eastern Section and associated noise barriers will also be visible just west of Ma Wat River Channel. Although the building locations for sites D2-14 and D2-15, reserved for government uses, are currently not available, it is expected that the proposed buildings will be up to 10 storeys high and therefore may be visible to some viewers in the south of this VSR group. Visual impact from the construction phase will generally result from earthworks, scaffolding, installation/operation of construction machinery, and potential light glare from the construction site during night time operation and from the residential buildings during operation. Overall the proposed FLN NDA involves significant land use changes in the area and the magnitude of change is anticipated to be large during both construction and operation.													

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
	F6	Sha Tau Kok Road	Local	DP10 Fanling Bypass Eastern Section, DP12 Reprovision of Temporary Wholesale Market at D1-6 (G); D2-9 (PRH), D2-12 (R2), D2-14 (G), D2-15 (G)	Nil	Within NDA (Road itself affected. Approx. 20 m from closest building)	Small	Poor	Good	Temporary [Short]	Permanent	Reversible	Irreversible	Intermediate	Small
Glimpses of the new high rise residential buildings in D2-9 and D2-12 (up to 35 and 20 storeys respectively) as well as buildings of up to 10 storeys in the sites reserved for government uses (D2-14 and D2-15) may be visible in between gaps of the planted roadside trees for viewers travelling along this road. The reprovisioning of the existing North District Temporary Wholesale Market for Agricultural Products at D1-6 (DP12) is also right next to the road and may be visible. The road itself will be affected by the new Lung Yeuk Tau interchange with the Fanling Bypass Eastern Section (DP10) and it is likely that during construction, impact will be greater than during operation. Visual impact during construction will largely be due to road works associated with the Fanling Bypass Eastern Section as well as scaffolding, installation/operation of construction machinery and potential light glare from the construction site during night time operation															
As views along Sha Tau Kok Road are fairly contained by the extensive roadside planting, only intermittent views of the roadside developments will be visible above the roadside vegetation line. Noting also most of the VSRs will be at low levels, highest if travelling on double-decked buses, no elevated views over the vegetation are expected. Overall, it is predicted that the magnitude of change will be <u>intermediate</u> during construction and <u>small</u> during operation.															
Y	F7	Ma Wat Tsuen Area	Local & District	DP10 Fanling Bypass Eastern Section, DP12 Reprovision of Temporary Wholesale Market at D1-6 (G); D2-12(R2), D2-9(PRH)	Partial	100 (50 to Ma Wat River Channel Diversion)	Medium	Fair	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Large	Large
In general, for viewers at higher levels, the panoramic view looking northeast from this area will remain open and unaffected by the proposed FLN NDA, with rural village houses in the fore- and middle-ground, and the natural uplands of the Wa Shan range and Tsun Shan visible in the background. Only the built structures of D2-9 and D2-12 (up to 35 and 20 storeys high respectively) will be visible at a distance parallel to the existing industrial area at On Lok Tsuen. The high rise structures in Shenzhen in the background will be blocked for most viewers at higher levels.															
For viewers at lower levels, their view towards the FLN NDA will be largely blocked by existing buildings and vegetation especially that planted along Sha Tau Kok Road. Sites D2-14 and D2-15, reserved for government uses with buildings up to 10 storeys high, and the North District Temporary Wholesale Market for Agricultural Products will be reprovisioned at D1-6 are expected to be shielded by the existing vegetation.															
Visual impacts from the construction of FLN NDA itself will mainly be due to scaffolding and installation/operation of construction machinery but the diversion of the Ma Wat River Channel, including excavation of the new channel and building of the Fanling Bypass Eastern Section, including site clearance, erection of the piers and structure are all predicted to cause a large change in view, particularly for those residencies further north and west of the area, nearest the new developments. The magnitude of change due to Fanling Bypass Eastern Section and Ma Wat River diversion, both associated with the FLN NDA, is therefore anticipated be <u>large</u> for both construction and operation															
	F8	Shung Him Tong	Local	DP10 Fanling Bypass Eastern Section; D2-12(R2), D2-9(PRH)	Partial	400 (60 to Ma Wat River Channel Diversion)	Large	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Large	Large
Views from this VSR towards the main FLN NDA are largely shielded by existing shrubland and trees in the vicinity, and only a small portion of the higher levels of new residential buildings in D2-9 and D2-12 (up to 35 and 20 storeys high respectively) may be visible above the existing vegetation and high rise buildings. Sites D2-14 and D2-15, reserved for government uses with buildings up to 10 storeys high, and the North District Temporary Wholesale Market for Agricultural Products that will be reprovisioned at D1-6 are expected to be shielded by the existing vegetation. This VSR is, however, very close to the Fanling Bypass Eastern Section (DP10) and to the Mat Wat River Diversion which will pass close by the periphery of the residential area.															
Visual impacts from the construction of FLN NDA itself will mainly be due to scaffolding and installation/operation of construction machinery in distance but the diversion of the Ma Wat River Channel, including excavation of the new channel and building of the Fanling Bypass Eastern Section, including site clearance, erection of the piers and structure are all predicted to cause a large change in view, particularly for those residencies further west of the area, nearest these new developments. The magnitude of change due to Fanling Bypass Eastern Section and Ma Wat River diversion, both associated with the FLN NDA, is therefore anticipated be <u>large</u> for both construction and operation															

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
	F9	Heritage Trail (South of Sha Tau Kok Road)	Local	DP10 Fanling Bypass Eastern Section, DP12 Reprovision of Temporary Wholesale Market at D1-6(G); D2-9 (PRH), D2-12 (R2), D2-14 (G), D2-15 (G), D3-7 (R1c)	Partial	150 (100 to Ma Wat River Channel Diversion)	Large	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Large	Large
<p>The existing view looking at rural village houses in the foreground and the Tsung Shan range in the background will generally remain unobstructed along the length of this VSR due to screening by existing vegetation and buildings, however, tops of the higher rise new buildings at the south-eastern tip of the FLN NDA may become visible at some points along the route (e.g. D2-9 up to 35 storeys high, D3-7 up to 30 storeys high and D2-12 up to 20 storeys high). In addition, buildings in D2-14 and D2-15, reserved for government uses with buildings up to 10 storeys high, and the North District Temporary Wholesale Market for Agricultural Products that will be reprovisioned at D1-6 may be partially visible at some points along the route.</p> <p>This VSR is, however, very close to the Fanling Bypass Eastern Section (DP10) and to the Mat Wat River Diversion which will pass close by the trail for about 500 m and will be apparent in their view west. Most heritage buildings are close to the trail itself however and the new developments will not block this VSR group's view of them.</p> <p>Visual impacts from the construction of FLN NDA itself will mainly be due to scaffolding and installation/operation of construction machinery in distance but the diversion of the Ma Wat River Channel, including excavation of the new channel and building of the Fanling Bypass Eastern Section, including site clearance, erection of the piers and structure are all predicted to cause a large change in view to these viewers as they follow the Heritage Trail. The magnitude of change due to Fanling Bypass Eastern Section and Ma Wat River diversion, both associated with the FLN NDA is therefore anticipated be large at both construction and operation.</p>															
	F10	Po Kat Tsai	Local	D- Sites	Nil	1000	Small	Good	Good	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
<p>Views to the proposed FLN NDA are limited from this VSR, since they are screened by the mature woodland. It is possible that the tops of some high rise residential blocks in D- Sites may be visible from this VSR and therefore, the magnitude of change must be considered small for this area rather than negligible.</p>															
Y	F11	Belair Monte & Regentville	District	D-Sites	Full	70	Large	Poor	Poor	Temporary [Medium]	Permanent	Reversible	Irreversible	Large	Large
<p>The proposed FLN NDA involves significant changes in terms of land use in this area and a major change in view is expected during both the construction and operation phases for this VSR, particularly for residents facing north towards FLN NDA. The existing open, rural land to the north will become urban with many high rise residential blocks (e.g. D3-6, D3-7, D2-12 and D2-9, between 20 and 35 storeys high) and supporting facilities (e.g. schools at D3-11, D3-12 up to 8 storeys high). For residents at elevated levels, their views to Tsung Shan and Wa Shan will be largely blocked with some partial views through gaps between the buildings and along the view corridors created by D2-3, D3-5 and D2-8 for open space use. Visual impact from the construction phase will generally result from the site formation in the D Sites, scaffolding, installation/operation of construction machineries, and potential light glare from the construction site during night time operation.</p> <p>The magnitude of change will be large both during construction and at operation for this VSR.</p>															
	F12	Wing Fai Centre & Wing Fok Centre	Local	D- Sites	Full	70	Large	Poor	Poor	Temporary [Medium]	Permanent	Reversible	Irreversible	Large	Large
<p>The proposed FLN NDA involves significant changes in terms of land use in this area and a major change in view is expected during both the construction and operation phases for this VSR, particularly for residents facing north towards FLN NDA. The existing open, rural land to the north will become urban with many high rise residential blocks (e.g. D3-6, D3-7, D2-12 and D2-9, between 20 and 35 storeys high) and supporting facilities (e.g. schools at D3-11, D3-12 up to 8 storeys high. For residents at elevated levels, their views to Tsung Shan and Wa Shan will be largely blocked with some partial views through gaps between the buildings and along the view corridors created by D2-3, D3-5 and D2-6 for open space use. Visual impact from the construction phase will generally result from the extensive earthworks and site formation in the D sites, scaffolding, installation/operation of construction machineries, and potential light glare from the construction site during night time operation.</p> <p>The magnitude of change will be large both during construction and at operation.</p>															
	F13	Fanling Garden	Local	D3-1a (R1),D3-1b (HOS), D3-1c (R1c)	Partial	200	Small	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
<p>Built structures for residential buildings up to 30 storeys high in D3-1 may be visible above the Fan Garden Government Police Married Quarters or in the gap between those buildings and Wing Fok and Wing Fai Centres for viewers on the top floors of flats in Fanling Garden facing towards FLN NDA. The existing view of the residential developments in the distance will remain unchanged and views from the lower levels of this VSR are largely shielded by existing trees and other buildings nearby, so again will not be affected by the NDA.</p> <p>Therefore only a small change in view for residents on the higher floors is anticipated during both construction and operation with visual impacts from the construction phase mainly caused by scaffolding and installation/operation of construction machinery in the distance. The magnitude of change will be small for both phases.</p>															

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								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	F14	Good View New Village/ Ling Shan Tsuen	Local	D3-1a (R1),D3-1b (HOS), D3-1c (R1c) D3-8 (PRH)	Full	120	Large	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		Noting residents in this area are mainly living in 3-storey village houses, their views are largely screened by the roadside plantings along Ma Sik Road and only the houses at the north of the villages will have any view towards the NDA. For residents with a view the scale of the high rise residential buildings in D3-1 and D3-8 (all up to 30 storeys) will largely block views north and appear to be large scale compared to houses in the adjacent neighbourhood. However, the roadside planting does screen much of these views and sites D3-2 and D3-9 are designated as amenity areas which will allow for further planting. Visual impact from the construction phase will generally result from earthworks, any necessary tree removal, scaffolding, installation/operation of construction machinery and potential light glare from the construction site during night time operation.													
		It is therefore anticipated that the magnitude of change will be intermediate during both the construction and operations.													
Y	F15	Noble Hill	District	DP9 Fanling Bypass Western Section, DP10 Fanling Bypass Eastern Section; B1-7 (R2), B1-9 (R3), B3-3 (PRH), B3-6 (R2c), B3-7 (R2), B3-9 (R2), B3-12 (E); C2-5 (G), C2-6 (G), C2-7(E), C2-9(E), C2-8 (O); D2-2 (HOS), D3-1a (R1),D3-1b (HOS), D3-1c (R1c)	Full	100	Large	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		Residents at low levels of this VSR have their views towards the NDA partially blocked by existing vegetation and some existing buildings such as Woodland Crest, so many of the proposed new structures are unlikely be visible. However, for views at higher levels, high rise structures in B and D Sites will be visible to the north and east as well as the new Fanling Bypass (both western and eastern sections) across Ng Tung River. Closer by the lower rise buildings of the Clinic and Sports Centre in C2-5, C2-6 will also be visible. Directly to the north and adjacent to Noble Hill, site C2-8 is designated as a Town Park with multiple sporting facilities and will be visible in the foreground as residents look down and this change in view is fairly compatible with the existing green nature of the view. The Town Park will also ensure the line of sight between Noble Hill and the ridgeline of Cham Shan and Wa Shan remains intact. Visual impacts during construction will mainly be caused by earthworks and site formation including the removal of trees, but also by scaffolding and installation/operation of construction machinery.													
		Overall the magnitude of change is predicted to be intermediate for both construction and operation for this VSR.													
Y	F16	Fanling Wai	Local	D3-1a (R1),D3-1b (HOS), D3-1c (R1c) D3-8 (PRH)	Nil	420	Small	Good	Good	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
		As residents' views in this VSR are largely blocked by other village structures and vegetation, general views are limited to within the village area. Jockey Club Road and many existing structures lie between this VSR and the NDA but the tops of residential high rise blocks in D3-1 and D3-8 (all up to 30 storeys high) may become visible to viewers at higher levels of a few houses in the area, especially those facing north.													
		Overall, it is anticipated that at worst the magnitude of change will be small during both construction and operation.													
Y	F17	North District Park	Local	D3-1a (R1),D3-1b (HOS), D3-1c (R1c) D3-8 (PRH)	Partial	420	Small	Fair	Good	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
		Views for this VSR are contained by tall trees and landscaped vegetation within the park itself and most views towards the proposed FLN NDA are predicted to be shielded from sight. The tops of some high rise blocks (e.g. in D3-1 and D3-8, all up to 30 storeys), may become visible above the existing vegetation line in some views. It is predicted that at worst only a small change in view will be experienced during both construction and operation phases and the magnitude of change will be small.													
	F18	Ka Fuk Estate Area	District	D3-1a (R1),D3-1b (HOS), D3-1c (R1c), D3-8 (PRH)	Partial	750	Medium	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Small	Small
		For residents with views facing towards FLN NDA, glimpses of the Wa Shan and Tsung Shan ranges in the background will be partially blocked by the residential blocks in D3-1 and D3-8 (all up to 30 storeys) in the distance. Existing views of the Sheung Shui/Fanling urban area in the foreground and other high rise buildings including Noble Hill, Tin Ping Estate and Wing Fok Centre will remain unchanged in the middle distance. Only viewers at higher levels will note any discernible change in view and visual impacts during construction will mainly be caused by scaffolding and installation/operation of construction machinery in the distance.													
		It is therefore anticipated that overall the magnitude of change will be small during both the construction and operation phases.													

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
	F19	On Kwok Villa	Local	DP13 New SPS in C2-3 (OU-SPS) C2-8 (O), C2-5 (G), C2-6 (G), C2-7 (E), C2-9 (E); D2-2(HOS), D3-1a (R1),D3-1b (HOS), D3-1c (R1c).	Partial	120	Medium	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
On Kwok Villas are quite low rise and their views north to the NDA are largely blocked by the higher rise Woodland Crest buildings. At lower levels of the villas, views are fairly contained by vegetation also. To the east and adjacent to On Kwok Villa, site C2-8 is designated as a Town Park with multiple sporting facilities and will be visible to residents but this change in view is fairly compatible with the existing green nature of the view. The Town Park will also ensure the line of sight between this VSR and the ridgeline of Tsung Shan Range remains intact. Residents facing northeast may see the new SPS (DP13) in C2-3 (up to 5 m tall), Clinic and Sports Centre buildings in C2-5 and C2-6 which are up to 5 storeys high and possibly the schools which will be up to 8 storeys high in C2-7 and C2-9. Those houses facing east may have views of the higher rise structures in D2-2 and D3-1 (up to 20 and 30 storeys respectively) at least 400 m away. Visual impacts during construction will mainly be caused by nearby earthworks for C2-8 site formation including the removal of trees, but also by scaffolding and installation/operation of construction machinery in the distance. Overall, it is anticipated that the magnitude of change will be <u>intermediate</u> during both construction and operation.															
Y	F20	High Rise Residential Buildings around Tin Ping Estate	District	DP9 Fanling Bypass Western Section B-sites; C2-5 (G), C2-6 (G); , C2-7 (E), C2-8 (O) C2-9 (E); D- Sites Possibly A3-1	Partial	250	Large	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Large	Large
Views for this VSR are assumed to be from higher levels of the high rise residential blocks, but will vary depending on the orientation of the flats. For residents with views looking east towards the proposed NDA, their panoramic view of the agricultural fields, small villages and patches of woodlands in the middle distance will be changed to new high rise buildings in D Sites (reaching up to 35 storeys high) and lower buildings in C2-5 and C2-6 designated for a Clinic and Sports Centre (up to 5 storey) and schools in C2-7 and C2-9 in the middle distance. The Town Park to be created in C2-8 will also be apparent before all these buildings, maintaining a sense of open space and greening and glimpses of the green hills in the background will remain visible in the distance although for some flats slightly lower down, view of distant hills and ridgelines may be blocked. For residents with views facing north towards the proposed NDA, views are already partially blocked by existing buildings such as Nobel Hill, but the existing landscape behind is largely rural in nature and visible. This will become urbanized and majority of the built structures located at the western portion of the NDA will be visible, especially the high rise blocks such as in B2-7, B2-12, and B3-3 all which have buildings up to 35 storeys, as well as 20 storey buildings in e.g. B3-6, B3-9. Some viewers with view to Table Hill may be able to see the Fresh Water Service Reservoir in A3-1. Views in this direction will be less changed than those facing east (described above) since the NDA is that much further away and there are more existing buildings in the foreground. Visual impact from the construction phase will generally result from earthworks and vegetation clearance, scaffolding, installation/operation of construction machinery, and potential light glare from the construction site during night time operation, as well as the site formation works necessary for the service reservoir in A3-1. Overall, it is anticipated that the magnitude of change will to be <u>large</u> during construction and operation.															
Y	F21	North District Sports Ground	Local	B3-3(PRH), B3-6(R2c) and B3-9 (R2)	Partial	320	Small	Fair	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
In general, views at low levels in this area will be screened by trees planted around the sports ground and other buildings in the neighbourhood and views to the north and east towards the proposed FLN NDA are largely already blocked by the existing high rise buildings such as Woodland Crest, and Tin Ping Estate. Only a small change in view may be experienced by viewers at higher levels of the stand, due to some high rise structures such as the residential blocks in B3-3, B3-6 and B3-9 being visible in gaps between the buildings. There are unlikely to be additional impacts during construction, but scaffolding and the installation /operation of construction machinery may be visible in the distance. The magnitude of change is predicted to be small during both construction and operation.															

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
	F22	Tsui Lai Garden	Local	DP9 Fanling Bypass Western Section; B-Sites	Partial	140	Medium	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		Views at lower levels are generally unaffected by the proposed FLN NDA as they will be screened by existing vegetation and other built structures, such that no discernible change in their view is anticipated. However, the open and panoramic views looking at the existing rural landscape of agricultural fields, small villages and patches of woodland from higher levels will likely be changed by FLN NDA for residents facing north, north east as part of this land will change in use to the urban development of the NDA. The general mass of buildings in B-Sites will dominate the view with a number of residential blocks reaching up to 35 storeys high (B2-7, B2-12, B3-3) but glimpses of the green hills in the background will still remain visible in the distance through view corridors that are maintained between the buildings.													
		Visual impact from the construction phase will generally be from site formation works, scaffolding, installation/operation of construction machinery, and potential light glare from the construction site during night time operation. Overall, it is anticipated that the magnitude of change is will be <u>intermediate</u> during construction and operation.													
	F23	Fung Kai Area	Local	B- Sites	Partial	170	Medium	Fair	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		VSRs in this area are generally at ground level, with their views to the proposed FLN NDA screened by the existing surrounding vegetation, such that no discernible change in their view is anticipated. However, noted that some of the viewers from the school area along Jockey Club Road and off Fung Nam Road will likely have elevated views that look over the existing vegetation and towards the proposed NDA, it is predicted that buildings in many B-Sites, especially the higher rise structures of which there are many, will likely be visible, and will cause a moderate change in view.													
		Visual impacts from the construction phase will mainly be caused by site formation works, scaffolding and installation/operation of construction machinery. It is expected that the magnitude of change will be <u>intermediate</u> during both construction and operation.													
Y	F24	Sheung Shui Wai Area	Local	B- Sites	Partial	90	Medium	Fair	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		VSRs in this area have fairly contained views and so for viewers at lower levels, views are either partially or fully blocked by other buildings or mature vegetation in the area and very little change in view is predicted. Only the tops of some of the very high rise structures such as the public housing developments in B2-7, B2-12 and B3-3 (up to 35 storeys) and B2-6, B2-11(up to 25 storeys) may be visible above the existing building/vegetation line, in the distance. For these higher level VSRs (e.g. at the top of the 3-storey village houses) that have views looking towards FLN NDA, a moderate change in view is predicted.													
		Views through to the Cham Shan/Wa Shan ranges in the background will remain from many angles as view corridors between the buildings are incorporated into the NDA building placement.													
		Visual impacts from the construction phase will mainly be caused by some views of site formation works, scaffolding and installation/operation of construction machinery and overall the magnitude of change is predicted to be <u>intermediate</u> for construction and operation.													
	F25	Industrial Zone southwest of Sheung Shui Wai	District	DP11 SWHSTW – Further Expansion; B- Sites	Partial	520	Small	Fair	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		Low level views at this area are largely screened by existing trees and other buildings and no change in view at this level is therefore expected. The majority of the high rise structures in the western portion of the FLN NDA will likely be visible from this VSR at elevated levels however. Key built structures including, B2-7, B2-12, and B3-3 for public rental housing (up to 35 storeys) and medium density residential (up to 20 storeys), will be visible above the vegetation line in the distance. Views to the Sheung Shui/Fanling urban area and the Cham Shan/Wa Shan range will remain unaffected. A moderate change is therefore expected. .													
		Visual impacts from the construction phase will mainly be caused by some views of site formation works, scaffolding and installation/operation of construction machinery and overall the magnitude of visual change is predicted to be <u>intermediate</u> during construction and operation.													
Y	F26 (K6a)	Ho Sheung Heung	Local	B2-7 (PRH), B2-12 (PRH), B3-3 (PRH)	Partial	600	Small	Good	Good	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
		These VSRs are far from FLN NDA (although within the KTN NDA) and views at ground level are largely contained by existing built structures and vegetation in the area so that no discernible change in view is expected at this level. A small portion of the high rise public housing blocks in e.g. B2-7, B2-12 and B3-3, up to 35 storeys high, may be visible at elevated levels of some houses facing east, however, above the vegetation line in the distance. At worst, a small change in view is expected for residents with such views within this VSR.													
		Visual impacts from the construction phase will mainly be from scaffolding and installation/operation of construction machinery and overall, it is predicted that at worst the magnitude of visual change due to the FLN NDA will be <u>small</u> during construction and operation.													

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
	F27 (K7a)	Tsung Yuen	Local	B3-3 (PRH), B2-7(PRH), B2-12(PRH)	Nil	500	Small	Good	Good	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
		(Note F27 is the same location as K7a, but different view)													
		Ground level views at this area are generally blocked by tall trees surrounding the village, and the proposed FLN NDA is predicted to be screened from sight by the trees and other buildings such that no discernible change in view is anticipated at lower levels. For some of the 3-storey village houses with elevated views looking towards the proposed FLN NDA, the tops of high rise public housing blocks in B3-3, B2-7 and B2-12 (up to 35 storeys high) may be visible in places and a small change in view is expected. Visual impacts from the construction phase will mainly be from scaffolding and installation/operation of construction machinery and overall, it is anticipated that the magnitude of change will be <u>small</u> during construction and operation.													
Y	F28 (K22)	Ki Lun Shan Footpath	Strategic	Entire Area of FLN and KTN NDAs	Nil	2350	Small	Fair	Good	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		Although the mass of new FLN NDA buildings will be generally visible to this VSR, only a few buildings may be distinguishable from the existing built up area of Sheung Shui/Fanling. Overall it will be hard to distinguish the new buildings from existing and it is anticipated that very little if any discernible change in views will be experienced during both construction and operation phases due to FLN NDA. The existing open view looking over the green ranges in the foreground, residential development and Sheung Shui/Fanling urban area in the middle ground, and high rises in Shenzhen in the background will remain unchanged and the key change for these VSRs will come from KTN NDA as described previously and in Section 12.12.1.3 . Thus, the magnitude of change due to just FLN NDA will be small, but given these VSRs can see KTN closer by, the overall magnitude of change experienced by these VSRs is predicted to be <u>intermediate</u> .													
Y	F29 (East of K24)	Wu Tip Shan Lookout	Strategic	Entire Area of FLN NDA	Partial	1450	Medium	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		Although the mass of new FLN NDA buildings will be generally visible to this VSR, only a few buildings will be distinguishable from the existing built up area of Sheung Shui/Fanling. The high rise buildings in D-Sites in the east of the NDA will be visible below Wa Shan and further west some high rise buildings from B-Sites will also be visible. The current green space and view to the green foothills between higher rise structures in the north and south of Sheung Shui and Fanling will however be largely blocked by new built structures such as the lower rise C-Site buildings. The distant view of high rise buildings in Shenzhen will remain. Visual impacts from the construction phase will mainly be caused when scaffolding and construction machinery become visible in a distance. In terms of visual amenity there will be some loss of visual access to greenery during both the construction and operation phases and overall the magnitude of change is anticipated to be <u>intermediate</u> for both phases.													
Y	F30 (K2)	Tai Shek Mo Footpath & Lookout (Looking towards KTN & FLN NDA)	Strategic	Entire Area of FLN NDA & A- Sites high rise buildings in KTN NDA	Partial	1750 from FLN NDA and 380 from KTN NDA	Medium	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		The entire FLN NDA will be visible in the distance from this VSR, and it will largely blend with the existing urban view of the Sheung Shui/Fanling area. This VSR is over 1.7 km from the proposed FLN NDA, but there will be some loss of visual access to greenery and a moderate change in view is anticipated during both the construction and operation phases. For the sections of the footpath with views both to the KTN and FLN NDA, much of the KTN NDA will be blocked by the ridges and foothills of Tai Shek Mo itself and only the tops of high rise buildings in KTN NDA will be visible behind the Tai Shek Mo Ridgeline (also detailed in Table 12.12.1.1). Existing views looking down to the Sheung Shui/ Fanling Urban Area, Ng Tung River and Sheung Yue River will remain unchanged by the KTN NDA. Much of the KTN NDA area visible to this VSR will experience no discernible change (e.g. Lo Wu Correctional Institution at G1-8; natural vegetation in G1-3; Lo Wu Saddle Club in G1-6 and G1-7; agricultural land in C2-2, C2-4 and C2-5; and the majority of Long Valley in C1-9 and C-6). Although the closest built structure in the KTN NDA is approximately 380 m away, this is the service reservoir in G1-4 and most of the structures causing visible change, such as higher rise residential buildings in A-sites, are much further away such that only a small change in view is anticipated due to the KTN NDA Overall the existing green ranges in the foreground and high rises in Shenzhen looking to the north in the background will remain unchanged and it is not considered that cumulatively the FLN and KTN NDAs confer more than an intermediate change in view at this VSR during construction and operation. Visual impacts from the construction phase will generally result from site formation works, scaffolding and construction machinery that become visible in the distance. Overall the magnitude of change is anticipated to be <u>intermediate</u> during construction and operation.													

*Code	Land Use Type A	Amenity
AGR	Agriculture	
C	Commercial	
CA	Conservation Area	
CDA	Comprehensive Development Area	
E	Education	
G	Government	
G-REC	Government Recreation	
GB	Green Belt	
HOS	Home Ownership Scheme	
IC	Institution / Community	
O	Open Space	
OU-C,R&D	Other Specified Uses - Commercial, Research & Development	
OU-DCS	Other Specified Uses - District Cooling System	
OU-FR	Other Specified Uses - Firing Range	
OU(NP)	Other Specified Uses - Nature Park	
OU-PFS	Other Specified Uses - Petrol Filling Station	
OU-POFEFTS	Other Specified Uses - Parking & Operation Facilities for Environmental Friendly Transport System	
OU-PTD	Other Specified Uses - Parking and Operation Facilities for Environmentally Friendly Transport System	
OU-R&D	Other Specified Uses - Research & Development	
OU-RAF	Other Specified Uses - Railway Associated Facilities	
OU(RCP)	Other Specified Uses – Refuse Collection Point	
OU-SPS	Other Specified Uses - Sewage Pumping Station	
OU-STW	Other Specified Uses - Sewage Treatment Works	
OU(VC)	Other Specified Uses - Visitor Centre	
OU(VMCCS)	Other Specified Uses - Vegetable Market and Credit Co-operative Society	
PRH	Public Rental Housing	
PRH(Local Rehousing)	Public Rental Housing (Local Rehousing)	
R1	Residential Zone 1 - highest density	
R1c	Residential Zone 1 - highest density - with commercial	
R2	Residential Zone 2 - medium density	
R2c	Residential Zone 2 - medium density - with commercial	
R3	Residential Zone 3 - low density	
R4	Residential Zone 4 - very low density	
V	Village Type Development	

12.12.1.3 VSRs affected by both KTN and FLN NDAs

In addition to impact assessments on the magnitude of visual change caused by each the individual NDAs as shown in **Tables 12.12.1, and 12.12.2**, this section also assesses the overall visual changes brought about from the KTN NDA and FLN NDA on those VSRs affected by both.

Three strategic VSRs have panoramic views which take in both the KTN and FLN NDAs. These are: K2/ F30 Tai Shek Mo Footpath and Lookout; K22/ F28 Ki Lun Shan Footpath, and K24 (similar to F29) Kei Lak Tsai Footpath in Lam Tsuen Country Park. Two local VSRs, K6/ F26 Ho Sheung Heung and K7/ F27 Tsung Yeun, also have potential views to both NDAs. **Table 12.12.3** details the magnitude of visual change from both NDAs in combination.

K15 Choi Po Court/Choi Yuen Estate, used in the KTN visual impact assessment, might just be able to see FLN NDA but it is not enough to have any additional affect on the magnitude of visual change this VSR experiences from KTN NDA.

Relevant photomontages are provided in **Figures 12.22.2/ 12.23.16** for K2/ F30, **Figures 12.22.13/ 12.23.14** for K22/ F28, **Figure 12.22.14** for K24 and **Figure 12.23. 15** for F29. These photomontages show the existing view from these select VPs and the unmitigated view of both NDAs, which helped to determine the magnitude of change ranking in **Table 12.12.3**. In addition, these photomontages show mitigated views at day 1 and year 10 of operation and these help support the findings in **Section 12.12.2.1** which reports on the significance of both unmitigated and mitigated visual impact.

No one view in K7/ F26 and K6/ F27 takes in both NDAs at the same time and therefore no photomontages to show both NDAs can be provided.

Table 12.12.3 - Magnitude of change caused by KTN and FLN NDAs on identified VSRs with views of both

Remarks: The approximate closest viewing distance to the proposed NDA is measured from the edge of the VSR group to the closest built structure proposed within the NDA.

VY (Yes [Y]/ blank)	VSR Code (Code for other NDA)		VSR Category (Strategic/ District/ Local)	Key Sites/Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
		Name						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	K2 & F30	Tai Shek Mo Footpath & Lookout	Strategic	Entire FLN NDA; A-Sites and D-Sites high rise buildings in KTN NDA	Partial	380 (from KTN NDA) 1750 (from FLN NDA)	Small	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		Most of FLN NDA will be visible to the south east of this VSR and will cause an intermediate magnitude of visual change in itself, as detailed in Table 12.12.1.2 . Conversely, much of the KTN NDA will be blocked by the ridges and foothills of Tai Shek Mo itself and this NDA is thought to confer a small change in view from this VSR, as detailed in Table 12.12.1 . Although the closest built structure in KTN NDA is approximately 380 m away, this is the service reservoir in G1-4 and most of the structures causing visible change, such as higher rise residential buildings in A-Sites and D-Sites, are much further away. Overall the existing green ranges in the foreground and high rises in Shenzhen looking to the north in the background will remain unchanged and it is not considered that cumulatively FLN and KTN NDAs confer more than an intermediate change in view at this VSR during construction and operation. Visual impacts from the construction phase will generally result from site formation works, scaffolding and construction machinery that become visible in the distance. Overall the magnitude of change is anticipated to be <u>intermediate</u> during construction and operation.													
Y Y	K22 & F28	Ki Lun Shan Footpath	Strategic	Entire KTN NDA area; FLN NDA: mainly B-Sites and D-Sites	Nil	650 (from KTN) 2350 (from FLN)	Medium	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		Views vary depending where the VSRs are along the footpath and at what elevation. Generally once at the summit of Ki Lun Shan and along the ridgeline, views north east look over KTN NDA fairly close by, whereas FLN NDA is much further away, to the east. Many of the higher rise buildings within the south of KTN will be prominent in the view as described in Table 12.12.1 but much of the Long Valley area will remain visible. Individual buildings within FLN NDA will hardly be distinguishable, but rather the general higher rise building massing will be evident in the B-Sites and D-Sites as described in Table 12.12.2 . Although the change due to FLN alone is small and the change due to KTN is intermediate, much of the rural aspect of the area remains and all key mountains remain visible. Visual impacts from the construction phase will generally result from site formation works, scaffolding and construction machinery. Overall the magnitude of change is anticipated to be <u>intermediate</u> during construction and operation.													
Y Y	K24/ F29	Kei Lak Tsai Footpath in Lam Tsuen Country Park including Wu Tip Shan Lookout	Strategic	Entire area of KTN NDA from certain locations on the path; Entire area of FLN NDA from other locations on the path.	Partial	1450 (from FLN NDA) 2100 (from KTN NDA)	Medium	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		Views vary depending where the VSRs are along the footpath and at what elevation. The entire KTN NDA will generally be visible in the far distance from certain locations further west, while the entire FLN NDA will be visible from other locations, such as the Wu Tip Shan lookout point. Each NDA is thought to cause an intermediate change if view as described in Tables 12.12.1 and 12.12.2 but as this VSR is located at a distance from the two proposed NDAs and much of the surrounding landscape will not change in appearance due to this Project. The combined effect of the NDA will still cause an intermediate change in view. Visual impacts from the construction phase will generally be resulted from scaffolding works and construction machineries that become visible in a distance. Overall the magnitude of change from both NDAs is anticipated to be <u>intermediate</u> for construction and operation.													

VY (Yes [Y]/ blank)	VSR Code (Code for other NDA)		VSR Category (Strategic/ District/ Local)	Key Sites/Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
		Name						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	K6 & F26	Ho Sheung Heung	Local	KTN: Possibly G1-5 (G), D1-7 (R2), possibly G1- 5 (G); FLN: B2-7 (PRH), B2- 12 (PRH), B3-3 (PRH)	Nil	100 (from KTN NDA) 600 (from FLN NDA)	Small	Fair	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		Only the southern residencies of Ho Sheung Heung will have views to KTN NDA and as described in Table 12.12.1 , but to take account of the worst case scenario here the magnitude of change for these VSRs is considered intermediate. The tops of some high rise structures in B-sites in FLN NDA may be visible to some other VSRs here, as described in Table 12.12.2 , but these will be in the far distance and unlikely to increase the magnitude of visible change any further. Overall, to reflect the worst change in view experienced by viewers close to the high rise buildings in D1-7 of KTN NDA, the magnitude of change from both NDAs is anticipated to be <u>intermediate</u> for construction and operation													
Y	K7 & F27	Tsung Yuen	Local	KTN: Possibly G1-5 (G); FLN: B3-3 (PRH), B2- 7(PRH), B2-12(PRH)	Nil	300 (from KTN NDA) 500 (from FLN NDA)	Small	Good	Good	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
		Only a few VSR in Tsung Yuen may have views to the Fresh Water Service Reservoir in G1-5 at KTN NDA as described in Table 12.12.1 , and this will cause very little change to their views. The tops of some high rise structures in B-Sites in FLN NDA may be visible to some other VSRs here, facing in the opposite direction, as described in Table 12.12.2 , but these will be in the far distance and cause a small change in view at worst. No KTN NDA and FLN NDA structure can be seen in the same field of vision and therefore, the overall the magnitude of change from both NDAs is anticipated to be <u>small</u> for construction and operation.													

12.12.2 Significance of Visual Impacts

Based on the sensitivity assessment of VSRs as described in **Section 12.11** and the magnitude of change described in **Section 12.12.1**, the potential significance of the unmitigated visual impacts during the construction and operation phases have been calculated using the matrix described in **Table 12.10.3** of the methodology.

Residual impact significance is also determined in this Section, considering the mitigation measures described in full in **Section 12.9**. Photomontages and landscape mitigation plans help to support the findings.

For full details of the construction and operation mitigation measures suggested in **Table 12.9.1**, refer to **Section 12.9**, but in principle key mitigation measures suggested to alleviate just visual impacts include MM2 Detailed Design – Visual, MM16 Screen Hoarding and MM17 Light Control. Other mitigation measures that allow for soft landscaping of areas and structures to improve visual amenity include MM6 Slope Landscaping, MM9 Vertical Greening, MM10 Green Roof, MM11 Screen Planting and MM12 Road Greening, and all these measures also confer an element of landscape impact mitigation due to their greening nature. Some mitigation measures that may be primarily considered to alleviate landscape impacts, such as MM4 Tree Protection & Preservation, MM5 Tree Transplantation, MM7 Compensatory Planting and MM8 Woodland Compensatory Planting, may also serve to alleviate visual impacts, by retaining or conferring a greening element to the view and therefore improving visual quality. This is particularly true for VSRs with a strategic view of the whole NDA, those near the proposed woodland compensatory planting areas or those near areas of trees that will benefit from protection and preservation. Finally, in helping to preserve and even enhance the riverside promenades and visual amenity, MM14 Watercourse Impact Mitigation is relevant to VSRs who travel along or are very close to the river, even though it is principally a landscape mitigation measure.

Some mitigation measures would be implemented during operation of the development, such as those involving soft landscaping, will actually start to be implemented during the construction stage of the Project, but are generally not considered to alleviate the visual impacts of construction. In some cases however, MM11 Screen Planting is suggested to alleviate construction impacts, where the VSRs are residents relatively near or within the NDA. In general, the significance of mitigated visual impact at construction is predominantly considered to be the same as the unmitigated significance as the mitigation effects are small, and the main effects of mitigation are conferred at the operation stage.

As noted previously, detailed architectural design of built elements in the NDA is ongoing at this stage of the development programme and therefore the building forms and building mass shown in the photomontages for the proposed NDAs may change in detailed design

stage and it is possible that with further refinement of design (e.g. of building forms, finishes and colours) visual impacts will be reduced. Similarly this is true of elements still undergoing engineering design refinements, such as for the water reservoirs in KTN and FLN NDAs.

12.12.2.1 Kwu Tung North NDA

Based on the sensitivity assessment of KTN VSRs as described in **Section 12.11.1** and the magnitude of change they might experience described in **Section 12.12.1.1**, the potential significance of the unmitigated visual impacts from KTN NDA during the construction and operation are provided in **Table 12.12.4** using the matrix given in the methodology, and taking into account site visits to the area. **Table 12.12.4** also provides suggested significance of mitigated impacts during construction and at operation day 1 and year 10. These residual impact significances assume the suggested mitigation measures are fully implemented, and that the full effect of the soft landscape mitigation measures is realized after ten years

Photomontages demonstrating the potential visual impact of the proposed project before and after mitigation from certain VPs in the KTN NDA are illustrated in **Figures 12.22.1-14** for KTN NDA.

Three of the VSRs for the KTN NDA assessment have views that will look over both KTN NDA and FLN NDA. These are: K2 (F30) Tai Shek Mo Footpath and Lookout; K22 (F28) Ki Lun Shan Footpath, and K24 (not used for FLN assessment) Kei Lak Tsai Footpath in Lam Tsuen Country Park and the significances of visual impact from both NDAs on these VSRs are provided in **Section 12.12.2.3**.

Table 12.12.4 - Significance of visual impacts for KTN NDA

VSR Code (Code for other NDA)	Name	Category of VSR (Strategic/ District/ Local)	VSR Type	VSR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
K1	Ma Tso Lung San Tsuen	Local	Residential	High	Intermediate	Intermediate	Moderate	Moderate	MM2, M11, MM16, MM17	MM2, MM6, MM9, MM10, MM11, MM12 MM17	Moderate	Slight/ Moderate	Slight
K2a	Tai Shek Mo Footpath & Lookout (Looking towards KTN NDA)	Strategic	Recreational	Low	Small	Small	Slight	Slight	MM2, MM4, MM17	MM2, MM4, MM5, MM7, MM8, MM9, MM10, MM11, MM12, MM17	Slight	Slight	Insignificant
K2b (F30)	Tai Shek Mo Footpath & Lookout (Looking towards KTN & FLN NDA)	Strategic	Recreational	Low	Intermediate	Intermediate	Moderate	Moderate	MM2, MM4, MM17	MM2, MM4, MM5, MM6, MM7, MM8, MM9, MM10, MM11, MM12, MM17	Moderate	Slight	Slight
K3	Western Range -- Lok Ma Chau Footpath	District	Recreational	Low	Intermediate	Intermediate	Moderate	Moderate	MM2, MM4, MM17	MM2, MM4, MM5, MM6, MM7, MM8, MM9, MM10, MM11, MM12, MM17	Moderate	Slight	Slight
K4	Cottage Area (Western Range)	Local	Residential	High	Large	Large	Substantial	Substantial	MM2, MM4, MM11, MM16, MM17	MM2, MM4, MM6, MM9, MM10, MM11, MM12 MM17	Substantial	Moderate	Moderate
K5a	Northern Knoll of Fung Kong Shan	District	Recreational	Medium	Large	Large	Moderate/ Substantial	Moderate/ Substantial	MM1, MM2, MM4, MM15, MM17	MM1, MM2, MM4, MM5, MM6, MM7, MM8, MM9, MM10, MM11, MM12, MM15, MM17	Moderate/ Substantial	Moderate	Moderate
K5b	Southern Knoll of Fung Kong Shan	District	Recreational	Medium	Large	Large	Moderate/ Substantial	Moderate/ Substantial	MM1, MM2, MM4, MM15, MM17	MM1, MM2, MM4, MM5, MM6, MM7, MM8, MM9, MM10, MM11, MM12, MM15, MM17	Moderate/ Substantial	Moderate	Moderate
K6	Ho Sheung Heung	Local	Residential	High	Intermediate	Intermediate	Moderate	Moderate	MM2, MM7, MM11, MM16, MM17	MM2, MM7, MM11, MM17	Moderate	Slight	Slight
K7	Tsung Yuen	Local	Residential	Medium	Small	Small	Slight	Slight	MM2, MM17	MM2, MM6	Insignificant	Insignificant	Insignificant
K8	MTR East Rail line north of Sheung Shui cycle track	Local	Travelling	Low	Small	Small	Slight	Slight	MM2, MM17	MM2, MM6, MM11, MM17	Slight	Slight	Insignificant

VSR Code (Code for other NDA)	Name	Category of VSR (Strategic/ District/ Local)	VSR Type	VSR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
K9	Long Valley Villages	Local	Residential	High	Intermediate	Intermediate	Moderate	Moderate	MM2, MM4, MM11, MM16, MM17	MM2, MM4, MM5, MM6, MM7, MM8, MM9, MM10, MM11, MM12, MM17	Moderate	Moderate	Slight
K10	Cycle track along riverside near Long Valley	Local	Travelling/ Recreational	Medium	Intermediate	Intermediate	Moderate	Moderate	MM2, MM11, MM16, MM17	MM2, MM6, MM7, MM8, MM9, MM10, MM11, MM12, MM14.3, MM17	Moderate	Moderate	Slight
K11	Cycle track west of Shek Wu Hui Sewage Treatment Works	Local	Travelling/ Recreational	Low	Small	Small	Slight	Slight	MM2, MM17	MM2, MM6, MM8, MM9, MM10, MM11, MM12, MM14, MM17	Slight	Slight	Insignificant
K12	Tsung Pak Long	Local	Residential	Medium	Small	Small	Slight	Slight	MM2, MM17	MM2, MM6, MM8, MM9, MM10, MM11, MM12, MM14, MM17	Slight	Insignificant	Insignificant
K13	Industrial Zone northeast of Tsung Pak Long	District	Occupational	Low	Intermediate	Intermediate	Slight	Slight	MM2, MM17	MM2, MM6, MM8, MM9, MM10, MM11, MM12, MM17	Slight	Slight	Slight
K14	Tai Tau Leng	Local	Residential	Medium	Negligible	Negligible	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
K15	Choi Po Court/Choi Yuen Estate	District	Residential	High	Intermediate	Intermediate	Moderate	Moderate	MM1, MM2, MM4, MM17	MM1, MM2, MM4, MM5, MM6, MM7, MM8, MM9, MM10, MM11, MM12, MM17	Moderate	Slight	Slight
K16	Tai Ping Area High Rise Residential Blocks	District	Residential	High	Small	Small	Moderate	Moderate	MM2, MM17	MM2, MM6, MM8, MM9, MM10, MM11, MM12, MM17	Moderate	Slight	Slight
K17	Hong Kong Golf Course, Fanling	Local	Recreational	Low	Negligible	Negligible	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
K18	Ascot Park Area	Local	Residential	Medium	Small	Small	Slight	Slight	MM2, MM7, MM11, MM16, MM17	MM2, MM7, MM11, MM12, MM17	Slight	Insignificant	Insignificant
K19	Existing Road Bridge Link over Fanling Highway	Local	Travelling	Low	Large	Large	Moderate	Moderate	MM2, MM4, MM11, MM16, MM17	MM2, MM4, MM5, MM7 MM9, MM10, MM11, MM12 MM17	Moderate	Slight/ Moderate	Slight

VSR Code (Code for other NDA)	Name	Category of VSR (Strategic/ District/ Local)	VSR Type	VSR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
K20	Valais & Europa Garden New Residential Development Area	Local	Residential	High	Small	Small	Moderate	Moderate	MM2, MM11, MM16, MM17	MM2, MM12, MM17	Moderate	Slight	Slight
K21	Kwu Tung Service Reservoir	District	Recreational	Medium	Small	Small	Slight	Slight	MM2, MM4, MM17	MM2, MM4, MM6, MM7, MM8, MM9, MM10, MM11, MM12, MM17	Slight	Slight	Slight
K22 (F28)	Ki Lun Shan Footpath	Strategic	Recreational	Medium	Intermediate	Intermediate	Moderate	Moderate	MM1, MM2, MM4, MM17	MM1, MM2, MM4, MM5, MM6, MM7, MM8, MM9, MM10, MM11, MM12, MM17	Moderate	Slight	Slight
K23	Chau Tau Village	Local	Residential	Low	Negligible	Negligible	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
K24	Kei Lak Tsai Footpath in Lam Tsuen Country Park	Strategic	Recreational	Medium	Intermediate	Intermediate	Moderate	Moderate	MM2, MM4, MM17	MM2, MM4, MM5, MM6, MM7, MM8, MM9, MM10, MM11, MM12, MM17	Moderate	Slight	Slight

12.12.2.2 Fanling North (FLN) NDA

Based on the sensitivity assessment of FLN VSRs as described in **Section 12.11.2** and the magnitude of change they might experience described in **Section 12.12.1.2**, the potential significance of the unmitigated visual impacts from FLN NDA during the construction and operation are provided in **Table 12.12.5** using the matrix given in the methodology, and taking into account site visits to the area. **Table 12.12.5** also provides suggested significances of mitigated impacts during construction and at operation day 1 and year 10. These residual impact significances assume the suggested mitigation measures are fully implemented, and that the full effect of the soft landscape mitigation measures is realized after ten years

Photomontages demonstrating the potential visual impact of the proposed project before and after mitigation from certain VPs in the FLN NDA are illustrated in **Figures 12.23.1-16** for FLN NDA.

Two of the VSRs for the FLN NDA assessment have views that will look over both FLN NDA and KTN NDA. These are: F30 (K2) Tai Shek Mo Footpath and Lookout; and F28 (K22) Ki Lun Shan Footpath and the significances of visual impact from both NDAs on these VSRs are provided in **Section 12.12.2.3**.

Table 12.12.5 - Significance of visual impacts for FLN NDA

VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	VSR Type	VSR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
F1	Cottage Area Lining Fu Tei Au Road	Local	Residential - Low Rise	High	Small	Small	Moderate	Moderate	MM2, MM4, M11, MM16, MM17	MM2, MM4, MM5, MM6, MM7, MM8 MM6, MM9, MM10, MM11, MM17	Moderate	Slight	Slight
F2	Existing Settlements around Sheung Shui Wa Shan	Local	Residential - Low Rise	High	Large	Large	Substantial	Substantial	MM2, MM4, M11, MM16, MM17	MM2, MM4, MM5, MM6, MM7, MM8 MM9, MM11, MM12, MM14, MM17	Moderate	Moderate	Slight
F3	Tsung Shan, High Hill	Strategic	Recreational	Medium	Intermediate	Intermediate	Moderate	Moderate	MM2, MM4, MM17	MM2, MM4, MM5, MM7, MM9, MM10, MM11, MM12, MM17	Moderate	Slight	Slight
F4	Siu Hang San Tsuen	Local	Residential - Low Rise	High	Intermediate	Intermediate	Moderate	Moderate	MM2, MM4, M11, MM16, MM17	MM2, MM4, MM5, MM7, MM9, MM11, MM12, MM17	Moderate	Moderate	Slight
F5	Kan Lung Tsuen Area	Local	Residential - Low Rise	High	Large	Large	Substantial	Substantial	MM2, MM4, M11, MM16, MM17	MM2, MM4, MM5, MM7, MM9, MM11, MM12, MM14.3, MM17	Substantial	Moderate/ Substantial	Moderate
F6	Sha Tau Kok Road	Local	Travelling	Low	Intermediate	Small	Slight	Slight	MM2, MM4, M11, MM16, MM17	MM2, MM4, MM5, MM7, MM9, MM11, MM12, MM17	Slight	Slight	Insignificant
F7	Ma Wat Tsuen Area	Local & District	Residential - Low Rise	High	Large	Large	Substantial	Substantial	MM2, MM4, M11, MM14.3MM17	MM2, MM4, MM5, MM7, MM9, MM11, MM12 MM14.3, MM17	Substantial	Moderate/Substan tial	Moderate
F8	Shung Him Tong	Local	Residential - Low Rise	High	Large	Large	Substantial	Substantial	MM2, MM4, M11, MM14.3 MM16, MM17	MM2, MM4, MM5, MM7, MM9, MM11, MM12, MM14.3 MM17	Substantial	Moderate/ Substantial	Moderate

Code (Code for other)	Name	VSR Category (Strategic/ District/ Local)	VSR Type	VSR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
F9	Heritage Trail (South of Sha Tau Kok Road)	Local	Recreational	Medium	Large	Large	Moderate	Moderate	MM2, MM4, M11, MM14.3 MM16, MM17	MM2, MM4, MM5, MM7, MM9, MM11, MM12, MM14.3 MM17	Moderate	Slight/ Moderate	Slight
F10	Po Kat Tsai	Local	Residential - Low Rise	Low	Small	Small	Slight	Slight	MM2, MM17	MM2, MM17	Slight	Insignificant	Insignificant
F11	Belair Monte & Regentville	District	Residential - High Rise	High	Large	Large	Substantial	Substantial	MM2, MM4, M11, MM16, MM17	MM2, MM4, MM5, MM7, MM9, MM10, MM11, MM12, MM17	Substantial	Substantial	Moderate/ Substantial
F12	Wing Fai Centre & Wing Fok Centre	Local	Residential - High Rise	High	Large	Large	Substantial	Substantial	MM2, MM4, M11,MM16, MM17	MM2, MM4, MM5, MM7, MM9, MM10, MM11, MM12, MM17	Substantial	Substantial	Moderate
F13	Fanling Garden	Local	Residential - Low Rise	Medium	Small	Small	Slight	Slight	MM2, MM17	MM2, MM11, MM17	Slight	Insignificant	Insignificant
F14	Good View New Village/ Ling Shan Tsuen	Local	Residential - Low Rise	Medium	Intermediate	Intermediate	Moderate	Moderate	MM2, MM4, M11, MM16, MM17	MM2, MM4, MM5, MM7, MM9, MM10, MM11, MM12, MM17	Moderate	Moderate	Slight/ Moderate
F15	Noble Hill	District	Residential - High Rise	High	Intermediate	Intermediate	Moderate/ Substantial	Moderate/ Substantial	MM2, MM4, M11,MM17	MM2, MM4, MM5, MM7, MM9, MM10, MM11, MM12, MM17	Moderate/ Substantial	Moderate/ Substantial	Moderate
F16	Fanling Wai	Local	Residential - Low Rise	High	Small	Small	Moderate	Moderate	MM2, MM17	MM2, MM17	Moderate	Slight	Slight
F17	North District Park	Local	Recreational	Medium	Small	Small	Slight	Slight	MM2, MM17	MM2, MM17	Slight	Insignificant	Insignificant
F18	Ka Fuk Estate Area	District	Residential - High Rise	High	Small	Small	Moderate	Moderate	MM2, MM17	MM2, MM17	Slight	Slight	Slight
F19	On Kwok Villa	Local	Residential - Low Rise	High	Intermediate	Intermediate	Moderate/ Substantial	Moderate/ Substantial	MM2, MM4, M11, MM16, MM17	MM2, MM4, MM5, MM7, MM9, MM11, MM12, MM17	Moderate	Moderate	Slight
F20	High Rise Residential Buildings around Tin Ping Estate	District	Residential - High Rise	High	Large	Large	Substantial	Substantial	MM2, MM4, M11, MM17	MM2, MM4, MM5, MM7, MM9, MM10, MM11, MM12, MM17	Substantial	Moderate/ Substantial	Moderate
F21	North District Sports Ground	Local	Recreational	Medium	Small	Small	Slight	Slight	MM2, MM7, MM17	MM2, MM7, MM17	Slight	Insignificant	Insignificant

Code (Code for other)	Name	VSR Category (Strategic/ District/ Local)	VSR Type	VSR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
F22	Tsui Lai Garden	Local	Residential - High Rise	High	Intermediate	Intermediate	Moderate/ Substantial	Moderate/ Substantial	MM2, MM4, M11, MM17	MM2, MM4, MM5, MM7, MM8, MM9, MM10, MM11, MM12, MM17	Moderate	Moderate	Slight
F23	Fung Kai Area	Local	Recreational (& Occupational & Travelling)	Low	Intermediate	Intermediate	Moderate	Moderate	MM2, MM4, M11, MM17	MM2, MM4, MM5, MM7, MM9, MM11, MM12, MM17	Moderate	Slight	Slight
F24	Sheung Shui Wai Area	Local	Residential - Low Rise	Medium	Intermediate	Intermediate	Moderate	Moderate	MM2, MM4, M11, MM16, MM17	MM2, MM4, MM5, MM7, MM9, MM11, MM12, MM17	Moderate	Slight	Slight
F25	Industrial Zone southwest of Sheung Shui Wai	District	Occupational	Low	Intermediate	Intermediate	Slight	Slight	MM2, MM4, MM17	MM2, MM4, MM5, MM7, MM11, MM17	Slight	Slight	Insignificant
F26 (K6)	Ho Sheung Heung	Local	Residential - Low Rise	Medium	Small	Small	Slight	Slight	MM2, MM17	MM2, MM17	Slight	Insignificant	Insignificant
F27 (K7)	Tsung Yuen	Local	Residential - Low Rise	Medium	Small	Small	Slight	Slight	MM2, MM17	MM2, MM17	Slight	Insignificant	Insignificant
F28 (K22)	Ki Lun Shan Footpath	Strategic	Recreational	Medium	Intermediate	Intermediate	Moderate	Moderate	MM2, MM4, MM17	MM2, MM4, MM5, MM6, MM7, MM8, MM9, MM10, MM11, MM12, MM17	Moderate	Slight	Slight
F29	Wu Tip Shan Lookout	Strategic	Recreational	Medium	Intermediate	Intermediate	Moderate	Moderate	MM2, MM4, MM17	MM2, MM4,MM5, MM7, MM8, MM9, MM10, MM11, MM12, MM17	Moderate	Slight	Slight
F30 (K2)	Tai Shek Mo Footpath & Lookout	Strategic	Recreational	Low	Intermediate	Intermediate	Moderate	Moderate	MM2, MM4, MM17	MM2, MM4, MM5, MM7, MM8, MM9, MM10, MM11, MM12, MM17	Moderate	Slight	Slight

12.12.2.3 VSRs affected by both KTN and FLN NDAs

Three strategic VSRs have panoramic views which take in both KTN and FLN NDAs. These are: K2/ F30 Tai Shek Mo Footpath and Lookout; K22/ F28 Ki Lun Shan Footpath, and K24 (similar to F29) Kei Lak Tsai Footpath in Lam Tsuen Country Park. Two local VSRs, K6/ F26 Ho Sheung Heung and K7/ F27 Tsung Yeun, also have potential views to both NDAs. The significance of visual impact resulting from both NDAs is assessed for these VSRs in this section.

K15 Choi Po Court/Choi Yuen Estate, used in the KTN visual impact assessment, might just be able to see the FLN NDA but it is not enough to have any additional effect on the magnitude of visual change this VSR experiences from KTN NDA and therefore it is not included in this combined assessment.

Significance of combined NDA visual impact is based on the sensitivity assessment of the VSRs as described in **Section 12.11** and the magnitude of change they might experience described in **Section 12.12.1.3**. K6/ F26 Ho Sheung Heung is ranked as of high sensitivity for KTN NDA assessment but medium for FLN NDA assessment due to being within KTN NDA and some houses being close to new development, whereas it is far from FLN NDA. For the combined assessment it is ranked as highly sensitive.

The potential significances of the unmitigated visual impacts from both NDAs during the construction and operation are provided in **Table 12.12.6** using the matrix given in the methodology, and taking into account site visits to the area. **Table 12.12.6** also provides suggested significance of mitigated impacts during construction and at operation day 1 and year 10. These residual impact significances assume the suggested mitigation measures are fully implemented, and that the full effect of the soft landscape mitigation measures is realized after ten years.

Relevant photomontages are provided in **Figures 12.22.2/ 12.23.16** for K2 & F30, **Figures 12.22.13/ 12.23.14** for K22 & F28 and **Figures 12.22.14/ 12.23.15** for K24/ F29. These photomontages show the existing view from these select VPs and the unmitigated view of both NDAs, which helped to determine the magnitude of change rankings in **Table 12.12.3**. In addition, these photomontages show mitigated views at day 1 and year 10 of operation and these help support the findings in **Table 12.12.6** below.

No one view in K7/ F26 and K6/ F27 takes in both NDAs at the same time and therefore no photomontages to show both NDAs can be provided.

Table 12.12.6 - Significance of visual impacts for identified VSRs affected by both KTN NDA and FLN NDA

VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	VSR Type	VSR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
K2 & F30	Tai Shek Mo Footpath & Lookout	Strategic	Recreational	Low	Intermediate	Intermediate	Moderate	Moderate	MM2, MM4, MM17	MM2, MM4, MM5, MM6, MM7, MM8, MM9, MM10, MM11, MM12, MM17	Moderate	Slight	Slight
K22 & F28	Ki Lun Shan Footpath	Strategic	Recreational	Medium	Intermediate	Intermediate	Moderate	Moderate	MM2, MM4, MM17	MM2, MM4, MM5, MM6, MM7, MM8, MM9, MM10, MM11, MM12, MM17	Moderate	Slight	Slight
K24/ F29	Kei Lak Tsai Footpath in Lam Tsuen Country Park including Wu Tip Shan Lookout	Strategic	Recreational	Medium	Intermediate	Intermediate	Moderate	Moderate	MM2, MM4, MM17	MM2, MM4, MM5, MM6, MM7, MM8, MM9, MM10, MM11, MM12, MM17	Moderate	Moderate	Slight
K6a & F26	Ho Sheung Heung	Local	Residential	High	Intermediate	Intermediate	Moderate	Moderate	MM2, MM17	MM2, MM7, MM17	Moderate	Slight	Slight
K7a & F27	Tsung Yuen	Local	Residential	Medium	Small	Small	Slight	Slight	MM2, MM17	MM2, MM17	Slight	Insignificant	Insignificant

12.13 Conclusion – Schedule 3 DP

There have been many considerations when developing the revised RODP, including the landscape and visual aspects of the Project. Given the generally rural nature of the NENT, development of the NDAs will lead to land use changes which will fundamentally change the landscape and visual character of the area, but right from the planning stage, measures have been taken to mitigate landscape and visual changes.

Each NDA has been carefully planned to achieve the distinct landscape characteristic of a new town and care has been taken to establish a network of linked open spaces, accommodating a number of parks, plazas, squares, green amenity strips and landscape corridors, to create 'green' new communities and partly compensate for any loss of such existing open spaces or other relevant landscape resources due to the developments. **Figures 12.9.0, 12.9.3-5 and Figures 12.10.0.1-2, 12.10.3-5** help to highlight some planning considerations for KTN and FLN NDAs respectively. Particular care has been taken to minimize site formation and achieve an ultimate cut/ fill balance as far as possible. In addition drainage levels of the ultimate development scenario have been considered and in general, low-lying areas will be filled to an elevation just above the flood levels of the ultimate scenario.

For the VIA in particular, it is relevant to note that detailed architectural designs of all built elements in the NDAs have not been finalised at this stage of the development programme. Therefore the built structure forms and masses (including for buildings, reservoirs etc.) shown in all the photomontages and drawings are illustrating maximum building heights and the currently suggested reservoir designs, which are likely to reflect the worst case scenario. These photomontages and drawings have helped to assess the magnitude visual change and significance of impact for various VSRs and the actual visual impacts are expected to reduce when the design of building and reservoir forms, finishes and colours have been refined at the detailed design stage taking into account that proper design control measures would be imposed where necessary.

Despite this careful initial design of the NDAs, some impact from the Project is inevitable and the potential landscape and visual impacts from the construction phases of the various components of the NDAs generally result from: site clearance including demolition of structures and tree removal/transplantation; site formation works including cutting (e.g. slope formation for reservoir formation) and filling (e.g. of streams and agricultural land); stockpiling of construction and demolition materials; construction of at-grade and above ground built structures including residential blocks, government/ institutional facilities, bridges, viaducts, interchanges, roads, slip roads, noise barriers and faunal barriers; temporary structures within the Project Site including site offices and parking areas; and re-alignment of roads, streams and watercourses. During operation, potential impacts are likely to result from the existence and operation of these built structures including new roads, intersections,

viaducts and any associated noise barriers. There will be some residual impacts that occurred during construction, such as the loss of trees and vegetation that will continue to cause impact at operation. Equally, planting carried out during construction of general landscaping works will have an impact during operation as will the implementation of the careful planning measures, such as provision of open spaces, green belt areas, etc.

The sections below summarise the outcomes of the LVIAs for each NDA. Cumulative impacts with other relevant projects are then discussed before reaching an overall conclusion for the Schedule 3 LVIA for this Project. Full details of the LVIAs for Schedule 2 DPs associated with the NDAs are reported in DP Packages **12A-D** in **Section 12.14** onwards.

12.13.1 KTN NDA

KTN NDA is planned with a town centre based around the proposed station and focused on transit oriented development. **Figure 12.9.0** illustrates this, with the Town Centre & North Residential Area at the centre around the proposed Kwu Tung station, comprised mainly of higher rise residential blocks. The Commercial, Research & Development Area/ Community Facilities Area, south of the Town Centre & North Residential Area is conveniently near the main existing transport linkage in the area (Fanling highway). A Research and Development Area at the north of the NDA will provide land for research and development uses in support of Lok Ma Chau Loop and a sports ground/sport complex. This NDA has large areas where little development will take place, specifically the Long Valley Ecological Area which is recognised as a major asset bestowing a unique green, open aspect; the two key green knolls at the centre of the NDA, those of Fung Kong Shan and the knoll to the west of Ho Sheung Heung (comprised mainly of fung shui woodland) which will be entirely preserved; and the Hilly Terrain Area in the west which will all be designated as Green Belt. Tai Shek Mo to the north east of the NDA will also be largely preserved within the Government Facility Area where existing facilities such as the Lo Wu Correctional Institution and Firing Range will remain but two new service reservoirs and their associated access road will be built here, causing some landform changes.

As well as dividing the KTN NDA into specific areas, the layout design uses a stepped building height profile throughout to integrate better into the rural character of the surrounding areas. Therefore the high density developments will be concentrated around the proposed Kwu Tung Railway Station, where residential buildings will reach up to 35 storeys high, and building density and height will drop gradually towards the periphery. Additionally site coverage restrictions have been considered and adopted in the allocation of land uses in order to avoid excessive building bulk, increase visual interest and give a more visually amenable appearance, and generally help integrate the new development with the existing local context and development.

The design of KTN NDA includes a green network centred on the Fung Kong Shan and Cycle Park, which features a pond at the centre of Fung Kong Shan. A wide green corridor also divides the Town Centre & North Residential Area from west to east and links up the Green Belt zone in Pak Shek Au with the Long Valley Nature Park, and the north-south space corridors between buildings link Kwu Tung South with the Fung Kong Shan Park. Once landscaped this green corridor will add to the green network. Additionally Sheung Yue River, flowing across the eastern corner of the NDA, has been maximised as an amenity feature by placing a riverside promenade along its western side which also serves as an important open space with good views to the Long Valley Nature Park on the opposite bank of the river.

Not only does the green network provide green relief to the NDA, but the corridors provide visual relief and by providing visual linkages to e.g. hilly backdrops, the visual corridors provide a sense of space. Similarly the preservation of the open area of Long Valley not only serves to retain its ecological/landscape value but allows distant views out from the NDA. Additionally, the positions of the building blocks have been designed to maintain view corridors and building separation and set back have been incorporated to achieve better visual permeability. There are buffer areas between major roads and proposed developments also, to help mitigate potential visual impacts through the creation of space but also allowing for screen and roadside planting in these areas.

Figures 12.9.3-5 help to highlight these key planning considerations for KTN NDA.

Overall in KTN NDA, with regards to site formation, the eastern portion west of the Sheung Yue River is generally low-lying and subject to residual flood risk and filling is proposed in this area up to the existing river bank level. On the western portion some excavation is required with extensive excavation at the service reservoir sites but in general KTN NDA will require a net general fill import after the refinement.

Landscape Character Areas and Landscape Resources

In terms of the LCAs in KTN NDA, the main LCA affected by the Project is the Natural Hillside Landscape (KLCA-1) (see **Figure 12.13.0**). Due to large topographical changes currently necessary to construct the water service reservoirs, even though the impacted area is relatively small, Natural Hillside Landscape (KLCA-1) will experience intermediate magnitude of change. This LCA has high sensitivity and hence the impact significance is substantial. Design of the reservoirs is not finalised and their final design should consider minimizing changes to the land form and interference with natural terrain. Retaining walls should also be considered as well as cut slopes, to minimize landform changes. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with surrounding landscape and to mimic the natural contouring and terrain. Landscaping of the reservoir roof and the surrounding reservoir structures will also mitigate the impact

to this LCA by creating a green vegetated area rather than hardscape surface. Planting of climbers to grow up vertical surfaces, where appropriate, could also soften any wall structures. By implementing all these measures as well as taking care to landscape any slopes that are formed and implement protection, preservation, transplantation and compensatory planting for trees, the impact on this LCA is considered to reduce to moderate at construction and slight at day 1 operation when soft landscape is in place. Although the soft landscaping measures will have matured and the impact be reduced further, it is not considered sufficient to be rated insignificant by year 10 of operation and therefore the residual impacts at this time remain slight.

Three other LCAs in this area are considered to be moderately affected by the Project before mitigation and these include Rural and Urban Peripheral Village Landscape (KLCA-2), Lowland Agricultural Landscape in this area (KLCA-5) and Transportation Corridor Landscape (KLCA-6).

For the Rural and Urban Peripheral Village Landscape (KLCA-2) over 30 ha of land in this LCA will be affected by sites designated for land use that is not compatible with the current LCA (e.g. high rise public rental housing, high density residential developments sometimes with commercial enterprises, comprehensive development areas, and recreational activity buildings including a swimming pool complex. This changes the area from a general rural/ urban peripheral village landscape to an urban landscape, giving a large magnitude of change. This LCA has medium sensitivity, and the Project avoids affecting historic buildings and key areas such as Ho Sheung Heung and Ying Yong, so the impact significance before mitigation is moderate. The change to this LCA is inevitable given the nature of the Project to provide new town areas. The need of the Project is explained in **Chapters 1 and 2** and the planning of the RODP and the future detailed design of elements are means by which this impact can be avoided and alleviated e.g. through provision of green corridors, consideration of green roofs, provision of adequate space for soft landscaping in developments and alongside roads, careful selection of form, textures and finish colours. There are some trees within this LCA and therefore measures to protect and preserve them, as well as transplant any unavoidably affected trees, or compensate for them (including in woodland areas), will slightly reduce the impact. Part of the compensatory planting and road greening may also serve as screen planting, but any additional screen planting will also add to the general green nature of the LCA and help alleviate the impact. Although the impact is alleviated, the residual impacts are predicted to remain moderate throughout the construction and operation of the Project.

The Lowland Agricultural Landscape in this area (KLCA-5) is predicted to be moderately affected by the Project before any mitigation measures. Careful planning of the revised RODP means much of the agricultural land in this area, particularly in Long Valley and around Ho Sheung

Heung will not be affected but other areas of agricultural will inevitably be affected and permanently lost.

There is no direct compensation for the loss of agricultural land but mitigation includes the possible preservation and protection of any trees and where unavoidably affected, transplantation or compensatory planting, which could mitigate the impact very slightly. The loss of agricultural land has been carefully studied for this Project. The setup of the LVNP and preservation and even enhancement of agricultural land in that area, as well as zoning of large sites C2-2 and C1-6 to the north and south of LVNP as agricultural land, is considered to go some way to alleviate impacts on agricultural land. By year 10 of operation the actively managed LVNP will confer some positive impact on this LCA. In addition, this LCA encompasses both active and abandoned agricultural land including orchard areas. According to a further review and site inspection in December 2012/January 2013 by PlanD with assistance from AFCD, in the surrounding areas of the Project, 160 ha of land have been found to be potentially suitable for agricultural rehabilitation/re-site. The major cluster (34 ha) is found at Kwu Tung South. Since there is no direct mitigation for the loss of agricultural land, however, the significance of impact on this LCA will remain the same before and after mitigation and therefore the impact will remain moderate throughout the construction and operation of the Project. Despite this, it is notable that a large area of this LCA in the eastern portions of the NDA, where it is associated with the Long Valley Ecological Area, will not be changed by the Project.

Transportation Corridor Landscape (KLCA-6) is also moderately affected by the Project prior to mitigation, largely due to impacts on Fanling Highway and nearby associate roads (KLR-14.1), particularly the potential loss of roadside planting. Implementing measures to protect and preserve trees as well as transplant and actively compensate them will reduce this impact. In addition, since there will be a number of noise barriers along roads, measures to design these sensitively and provide vertical greening, as well as provide roadside greening will also mitigate the impacts to this LR. Therefore the significance of the impact is considered to drop to slight at construction and operation day 1 and be insignificant by year 10 when soft landscaping measures will have had time to mature and confer their full effect.

Residual impacts at construction and operation are predicted to be insignificant for the other LCAs in this area, namely Urban Development Landscape (KLCA-3), and Major Water Course Corridor Landscape (KLCA-7). The exception is the Industrial Landscape (KLCA-4) which is considered to experience a slight benefit through the removal of low quality open storage landscape to higher quality residential and commercial uses.

A number of LRs in the KTN NDA will not be affected by the Project, falling in Green Belt zones, sites that will remain the same etc, and no LRs are predicted to be substantially affected once mitigation measures have all been implemented. LRs particularly affected by the Project at construction before mitigation in KTN NDA, which experience substantial adverse impacts, include four LRs detailed below. In addition, the residual impact for some of the LRs that are predicted to experience moderate adverse impacts at construction and operation before mitigation are also discussed.

Although the planning of the revised RODP has avoided a number of water ponds, the Fung Kong Shan Water Ponds (KLR-3.3) comprising a relatively large pond area of approximately 1.12 ha and with medium sensitivity will be unavoidably filled during construction of the NDA and remain so at operation and the significance before mitigation is considered to be substantial since all these ponds are lost. Although these ponds are lost, the conservation and enhancement of the LVNP will ensure the retention and provision of some ponds in this area. In addition one principle of planning for the NDA is to incorporate some new ponds, for example 'there will be a new pond in Fung Kong Shan Park, near their original pond locations. Although this will not directly compensate for the lost ponds, it will alleviate the impact. The requirements of such re-provision have been stipulated in the planning documents for the formulation of the Preliminary Layout Plan. Therefore although these particular ponds at Fung Kong Shan are irreversibly lost, at construction and operation day 1, the residual impact significance is considered to reduce to moderate, and by year 10 when the nearby Fung Kong Shan pond is established and the ponds in the LVNP have had time to confer a positive effect, the residual impact is considered to drop to slight.

Although much of the Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong (KLR-6.3) is on land zoned green belt so it will not be affected, some will be affected by land designated for incompatible uses such as for research and development in support of Lok Ma Chau Loop Development, a fire station cum ambulance depot, a standard swimming pool, residential housing and roads. Woodland in these areas is likely to be adversely impacted with trees being cleared during site clearance and site formation in the construction phase. Measures to protect and preserve trees as well as transplant and actively compensate with woodland plantation, will reduce this impact from substantial to moderate. Since this LR is on hillside, measures to landscape any slopes that are constructed will also help reduce impacts. During operation, the land use in these sites will have changed completely and the effect of the same mitigation measures will ensure the impact remains moderate at day 1 of operation. By year 10 of operation, the compensatory woodland planting is considered to have reached its full effect and the residual impact will reduce to slight.

About 2 ha of the 13.63 ha of Lowland Woodland in Pak Shek Au and Tong Kok (KLR-7.3) that falls within the RODP boundary is on land zoned for compatible uses (e.g. Green Belt) so it will not be affected. The majority of this LR, however, will be affected by such developments as the potential District Cooling System (DCS), roads and their associated amenity areas, part of a hospital, a public transport interchange, as well as residential and school developments which are all incompatible with the current landscape resources. While parts of the residential development complexes include open spaces between buildings, some trees in this LR will be lost during site clearance and formation works and the DCS construction will require significant landform changes as it is currently located on a small knoll. This large change to an LR considered to be highly sensitive means there is a substantial impact prior to mitigation. Measures to protect and preserve trees, transplant and actively compensate trees with woodland plantation will reduce this impact. Additionally, for the DCS area, minimization of topographical changes in the detailed design stage and landscape treatment of any slopes formed will also reduce the impact. Therefore the residual impact upon mitigation for this LR is considered to reduce from substantial to moderate at day 1 of operation and with the compensatory woodland planting reaching its full potential, to reduce to slight by year 10 of operation.

Most of the Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Range Foothills (KLR-8.3) will not be affected by the Project as it falls either outside the RODP boundary or on green belt. Two sites designated for water 'service reservoirs' however are located in this LR, and will require considerable site formation with cut/ fill slopes of up to 38 m for the Flushing Water Service Reservoir and up to 53 m for the Fresh Water Service Reservoir, all with maximum 40 degree slope steepness. The magnitude of change is therefore considered to be large. This LR has medium sensitivity and although the area affected is relatively small (under 4 ha), the impact is considered substantial prior to mitigation, largely due to the topographical changes to two adjacent foothill areas (See **Figures 12.11.6-7**). Design of the reservoirs is not finalised and their final design should consider minimizing changes to the land form and interference with natural terrain. Retaining walls should also be considered as well as cut slopes, to minimize landform changes. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with surrounding landscape and to mimic the natural contouring and terrain. Landscaping of the reservoir roof and the surrounding reservoir structures will also mitigate the impact to the shrubland/ grassland here (no trees will be planted on the roof itself) by creating a green vegetated area rather than hardscape surface. Planting of climbers to grow up vertical surfaces where appropriate could also soften any wall structures. By implementing all these measures as well as taking care to landscape any slopes that are formed and implement protection, preservation, transplantation and compensatory planting for trees, the impact on this LR is considered to reduce to

moderate at construction and operation day 1. With soft landscaping maturing and conferring greater mitigation by year 10 of operation, the impact is considered to reduce to slight.

The impact on Sheung Shui Community Sports recreational area (KLR-10.2) is predicted to be substantial at construction but to reduce to moderate at operation prior to mitigation. This drop of impact from construction to operation is due to some of the land use at operation being compatible with the current LR e.g. a new Standard Swimming Pool and Sports Centre at E1-5 providing a recreational area and creating similar LR value to the NDA. Mitigation measures to protect and preserve the few trees in this LR, as well as transplant any unavoidably affected, or compensate for them, will slightly reduce the impact. Moreover the planning of the revised RODP avoids impacts to most open space/ recreational areas and the principle adopted in the RODP planning ensures that public open space systems are incorporated. In KTN NDA, the key open spaces are the east-west running Town Park in the town centre and the Fung Kong Shan Park in the northern part of the NDA as well as a riverside promenade along the western side of Sheung Yue River. Sports grounds are designated at B2-8, E1-5 and F1-1. The public open space within the RODPs will ensure no overall loss of open space/ recreational LR and will help to mitigate the impact on KLR-10.2. Therefore the significance of impact is considered to reduce to moderate at construction and slight at operation day 1, becoming insignificant by year 10.

The LRs which are predicted to experience moderate adverse impacts at construction before mitigation are elaborated below.

The Water Course Network in Long Valley (Channelised) (KLR-1.4) is an integral part of the Long Valley Agricultural area and hence has high sensitivity. It is predicted to be moderately affected by the Project. The majority of this LR falls in Site C1-9 designated to become the LVNP and will not be adversely affected by the Project. Where the channels converge and link to an existing box culvert in the south, however, the water course will be diverted into box culverts as the land is designated for commercial, research and development uses. An active management plan for the LVNP in C1-9 is proposed which will generally enhance and protect this area and in so doing, it is likely that this LR passing through C1-9 will be protected. Overall with the diversion of some sections of this LR into box culverts the significance of impact is considered to drop to slight at construction and remain slight throughout operation.

The Streams in Kwu Tung (KLR-2.1) are predicted to be moderately affected by the Project before mitigation. These streams are located in the central area of KTN NDA and pass through villages including Fung Kong, Tung Fong, Tong Kok and Shek Tsai Leng such that while upstream sections are natural and with seasonal flow, some sections are fortified by concrete banks with grey water flowing and they are considered of poor quality and to have medium sensitivity overall. They will be affected by many different development uses including buildings

for residential, public rental housing, a primary school and commercial, research & development. Site formation works for these developments means that these streams will be filled and permanently lost at construction. Given the medium sensitivity of this LR and the large magnitude of change experienced, the significance of the impact is considered to be moderate before mitigation. Given the streams are permanently lost the significance of the impact is considered to remain as moderate, even at year 10 of operation. Nevertheless, in formulating the revised RODP care has been given to preserving the more natural streams within the NDA, such as Ma Tso Lung stream (part of KLR2-4), so that within the whole NDA, key streams are conserved. For Ma Tso Lung stream in particular, which has high sensitivity and is of high ecological value in parts, the upper and middle sections and tributaries have been avoided by zoning the area as Green Belt and a 15-30 m buffer zone (in Site F1-3) to restrict development. The boundary of Site F1-3 has also been adjusted to protect the stream's riparian vegetation. The overall significance of the Project's impact on KLR-2.4 is considered moderate at construction and operation before mitigation. Some short meanders of the stream in Site F1-3 and a section in Site E1-2 will still require diversion to protect the stream during site formation works and the stream diversion will be carefully designed to retain the natural stream bank and bed. At Site F1-3, an area of marsh/ pool is designated next to the stream, with trees and shrubs further from the bank, overall preserving, if not enhancing, these stream sections. Consideration will be made to further reducing any impact on the stream e.g. through fine tuning of the LMC Eastern Connection road alignment and placement of buildings within F1-3. As such, the residual impact is considered to reduce to slight at construction and operation day 1, and become insignificant by year 10 when the buffer planting will have matured to its full potential and the diverted sections of stream be fully established.

Most ponds in the KTN NDA Study area will not be affected by the Project but there are two areas where ponds are considered to be moderately affected before mitigation (i.e. Ho Sheung Heung Water Ponds (KLR3.1) and Water Ponds at Pak Shek Au (KLR-3.6)). The Ho Sheung Heung Water Ponds (KLR-3.1) are rated highly sensitive and most of them will remain in the NDA but one reasonably large and one small pond south of Ho Sheung Heung will be affected by residential and road developments and filled during site formation. This is considered an intermediate change leading to moderate significance of impact before mitigation. The small Water Ponds at Pak Shek Au (KLR-3.6) are rated as having medium sensitivity and will be lost during site formation for a hospital and road resulting in large change and moderate significance of impact before mitigation. Although some of the ponds are lost, the conservation and enhancement of the LVNP will ensure the retention and provision of some ponds in this area. Moreover the layout of the revised RODP incorporates some new ponds, for example a new pond at Fung Kong Shan Park in E1-7. Although this will not directly compensate for the lost ponds, it will alleviate the impact. Therefore although some

ponds are irreversibly lost, at construction and operation day 1 the residual impact significance is considered to reduce to slight, and by year 10 when any ponds in the RODP have had time to establish and the enhanced ponds in the LVNP have had time to confer a positive effect, although the impact will have reduced further, the residual impact is still rated slight.

Although most of Mitigation Wetland (KLR-4.2) will not be affected by the Project, this is rated a highly sensitive resource and will experience a moderate change as a small area of it will be irreversibly lost during site formation for amenities and commercial, research and development uses. Some of this LR falls within the LVNP and will be conserved and enhanced therefore ensuring the retention of these mitigation wetland areas and their possible enhancement. Therefore although a particular small area of mitigation wetland is irreversibly lost, at construction and operation day 1, the residual impact significance is considered to reduce to slight, and by year 10 when wetland and some marshes in the LVNP are enhanced and confer a positive effect, the residual impact will be insignificant.

OVTs along Fanling Highway and Castle Peak Road (KLR-5.4) are a highly sensitive resource and although all these trees will be retained, given there is a possibility they may be indirectly affected during construction works along the roads, a worst case scenario is used to conclude they may experience a small change and therefore gives a moderate significance of impact. By ensuring careful tree preservation measures are put in place to protect these trees, they should not be affected by the Project and the significance of residual impact is considered to reduce to slight at construction and operation day 1 and be insignificant by year 10 of operation.

Most of Tai Shek Mo Hillside Woodland (KLR-6.2) is outside the RODP boundary and a small section east of Fung Kong Shan falls within land designated as green belt; woodland here will not be affected by the Project. However, roughly 0.5 ha of this LR lies within a site designated as a potential activities centre where adverse impact by site formation and tree clearance is expected. Woodland in these areas is likely to be adversely impacted during site clearance and site formation in the construction phase and measures to protect and preserve trees, as well as transplant and actively compensate them with woodland plantation, will reduce this impact. The compensatory woodland planting will principally be within habitats of lower value such as upland grassland and the proposed locations are identified, for example, on the foothills of Tai Shek Mo and on the higher ground of Fung Kong Shan in KTN NDA; along Fanling Bypass; and a small area in the northern FLN NDA, as indicated on the Landscape Mitigation Plans in **Figures 12.15.0-6** for KTN NDA and **12.16.0-5** for FLN NDA. Since this LR is on hillside, measures to landscape any slopes that are constructed will also help reduce impacts. The impact is considered to reduce to slight at construction and operation day 1, and become insignificant by year 10

when the compensatory woodland planting will have matured to its full potential.

The majority of Ho Sheung Heung Fung Shui Woodland (KLR-6.4) will not be affected by the Project as it falls within an area zoned as 'green belt'. Tiny patches on the border of the woodland area may be affected by proposed residential development and a road. Measures to protect and preserve trees as well as transplant and actively compensate them with woodland plantation, will reduce this impact from moderate to slight at construction and day 1 operation. Since this LR is on hillside, measures to landscape any slopes that are constructed will also help reduce impacts. By year 10 of operation, the compensatory woodland planting is considered to have reached its full effect and the residual impact will reduce to insignificant.

A number of agricultural land LRs are predicted to be moderately affected by the Project, namely Long Valley Agricultural Land (KLR-9.1), Agricultural Lands in Shek Tsai Leng, Tong Kok and Tung Fong (KLR-9.3) and Other Agricultural Lands in KTN (KLR-9.4). Careful planning of the revised RODP means that most of the agricultural land in Long Valley and Ho Sheung Heung will not be affected. Large areas of other agricultural LRs, however, will be affected and permanently lost. There is no direct compensation for the agricultural land lost but mitigation includes the possible preservation and protection of any trees in such LRs and where unavoidably affected, transplantation or compensatory planting which could mitigate the impact very slightly. The loss of agricultural land has been carefully studied for this Project. The setup of the LVNP and preservation and even enhancement of agricultural land in that area, as well as zoning of large sites C2-2 and C1-6 to the north and south of LVNP as agricultural land, is considered to go some way to alleviate impacts on agricultural land. In addition, this broad agricultural land category (LR9) encompasses both existing active and abandoned agricultural land including orchard areas. According to a further review and site inspection in December 2012/January 2013 by PlanD with assistance from AFCD, the amount of active agricultural land affected by the Project in KTN NDA is approximately 4 ha. According to the AFCD Annual Report 2011-2012, currently, there are 4,071 ha of abandoned agricultural land in Hong Kong and 734 ha of active agricultural farmland and as such, the affected agricultural land only represents a small percentage of active agriculture land in Hong Kong. In the surrounding areas of the Project, 160 ha of land have been found potentially suitable for agricultural rehabilitation/re-site in the above mentioned site inspection. The major cluster (34 ha) is found at Kwu Tung South. Since there is no direct mitigation for the loss of agricultural land, the significance of impact on agricultural land in most of these areas will remain the same before and after mitigation. In Long Valley however, since this is the area where the LVNP will be actively managed and the positive effects of this measure conferred best, the impact will reduce to slight by year 10 of operation.

One large Rural Development Area (in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang (KLR-12.9)) and two small Rural Development Areas (around Ho Sheung Heung KLR-12.1, and in Long Valley, Yin Kong, Tsung Pak Long and Hakka Wai KLR-12.2), would experience moderately significant impacts due to the Project. The Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang (KLR-12.9), is a core LR at the centre of KTN NDA with medium sensitivity. The magnitude of change is large due to the large area affected by the Project. Small areas of this LR and will not be affected, such as those falling in Sites designated as 'green belt'. Most of the LR, however, will undergo change to an urban development area with more facilities than previously, such as a swimming pool complex, fire station cum ambulance depot, schools and residential developments. During construction site formation works at all these sites will cause large changes and at operation, when all the new structures are built, the changes will still be large. At Ho Sheung Heung (KLR-12.1) most of the village will remain unaffected or with compatible land use (e.g. D1-9 for village type development and D1-4 for very low density residential), but just a small area to the south will be developed into part of a denser high rise residential Site (D1-7). In KLR-12.2 it is unlikely this area will be affected by the Project as although it falls within the RODP, land uses are compatible. The Site C1-4 is designated as village type development and a precautionary 'small' magnitude of change has led to this highly sensitive LR having a 'moderate' significance of impact.

The loss of this LR type is inevitable given the nature of the Project to provide new town areas. The need of the Project is explained in **Chapters 1 and 2** and the planning of the RODP and the future detailed design of elements are means by which this impact can be avoided and alleviated e.g. through provision of green corridors and open space spines. There are some trees within this LR and therefore measures to protect and preserve these, as well as transplant any unavoidably affected, or compensate for them, will slightly reduce the impact. Equally the roadside planting, which may form part of the compensatory planting, will also enhance the greenery of the LR and provide the new landscape corridors. Given all these considerations, for both KLR12.1 and KLR12.2 (the smaller affected areas) the residual impact upon mitigation is considered to reduce from moderate to slight at construction and day 1 of operation. As no land use change is envisaged for KLR-12.2, the impact is considered to reduce further to insignificant by year 10 here, whereas at KLR-12.1 it will remain slight. The residual impact upon mitigation for KLR12.9 is considered to remain at a moderate rating throughout the Project.

Fanling Highway and nearby associate roads (KLR-14.1) is considered to undergo intermediate change, largely due to the impacts on its associated roadside planting and channels. Implementing measures to protect and preserve trees as well as transplant and actively compensate them will reduce this impact. In addition, since there will be a number of noise barriers along these roads, measures to design these sensitively

and provide vertical greening, as well as provide roadside greening will also mitigate the impacts to this LR. Therefore the significance of the impact is considered to drop to slight at construction and operation day 1 and be insignificant by year 10 when soft landscaping measures will have had time to mature and confer their full effect.

A number of LRs will not be affected by the Project, and for remaining LRs which are affected, slightly adverse or insignificant residual impacts are predicted by day 1 of operation (continuing to be insignificant throughout operation), but with the proper implementation of the suggested mitigation measures. The exception to this is for the industrial/ open storage LRs which will experience benefits due to the Project; many of these areas that are of poor quality will be transformed into well planned developments of higher quality with amenity planting e.g. residential areas or potential activity centres.

Visual Impact

From a visual perspective, three strategic VSRs were selected to assess the overall impact of KTN NDA from sites farther away that would get a good overall view towards the NDA (see **Figure 12.18.0**). These included the Tai Shek Mo Footpath & Lookout to the north east of the NDA (K2) (Looking both south west towards KTN NDA and south east to take in both the FLN NDA and KTN NDA), Ki Lun Shan Footpath (K22) to the far south west of the visual envelope and Kei Lak Tsai Footpath (K24) far away to the south east in Lam Tsuen Country Park. With all the planning mitigation measures described incorporated into revised KTN RODP (e.g. view corridors, green network, stepped building heights, setbacks from buildings, buffer zones), as well as construction and operation mitigation measures such as appropriate treatment of building façades, light control and general soft landscaping including slope landscaping, green roofs, road greening, screen planting, vertical greening as well as tree protection, transplantation and compensation, KTN NDA is predicted to cause a slight impact at year 10 to these viewers. For those viewers on the Tai Shek Mo Footpath and Lookout, KTN NDA in itself is predicted to cause insignificant visual impact at year 10, but since these VSRs will normally be able to see FLN NDA also, overall the residual visual impact at year 10 will be slight by year 10 of operation.

Seven VSRs in the visual assessment give a district perspective of KTN NDA and none of these will be substantially affected by the new development. One of these, recreational (and some residential and occupational) viewers on the northern and southern knolls of Fung Kong Shan (K5) are predicted to experience moderate to substantial residual visual impacts during construction as the new buildings surrounding, and reasonably close to, Fung Kong Shan will change the outlook for viewers at these locations. Being within the NDA itself, the viewers on the knolls of Fung Kong Shan will still be close to a lot of the new development at operation, but since this area is one of the suggested woodland compensation areas, this should provide some screening for views out to

KTN NDA from here. The careful detailed design of the NDA, preserving view corridors to Fung Kong Shan, as well as the development of the Fung Kong Shan and Cycle Park at the low-lying centre of the knolls, enhancing an area currently used for open storage and industrial use, will all help mitigate the visual impact here. Also considering few people actually climb to the top of Fung Kong Shan where these views are best, the significance of the visual impact at this VSR is predicted to drop to moderate at year 10 of operation.

Three district VSRs will experience moderate residual visual impacts during construction despite mitigation measures; the recreational viewers on the footpaths of the Western Range near Lok Ma Chau (K3); residential viewers in high rise blocks such as Choi Po Court and Choi Yuen Estate (K15); and residential viewers in high rise blocks in the Tai Ping Area (K16). Panoramic views from the Western Range of green lowland in the direction of the NDA will be largely blocked by new structures. Residents at higher levels of Choi Po Court and Choi Yuen will be able to see the entire KTN NDA in the middle distance although much of their view, such as of Long Valley, will remain unchanged and viewers at lower levels are unlikely to be able to see the new structures. Views for residents at higher levels of high-rise blocks in the Tai Ping area will have similar views, but given their immediate foreground view takes in the Farling Highway close by as well as the high rise buildings around Choi Yuen Estate, the change in view cause by KTN NDA will be less evident. Overall these three district VSRs are predicted to see intermediate changes in their views except those in the Tai Ping Area high rise buildings, who are predicted to see small changes in their views. Visual impacts to the VSRs will reduce to slight in operation by implementing mitigation measures to provide visual amenity.

The residents in high rise blocks such as Choi Po Court and Choi Yuen, being that much further from the NDA will also experience a slight visual impact by year 10 of operation (reduced from moderate at day 1) once the soft landscape measures have matured and convey their full mitigation.

The other two district VSRs, being the recreational viewers around Kwu Tung Service Reservoir (K21) and workers in the Industrial Zone northeast of Tsung Pak Long (K13), will experience slight residual visual impacts from construction onwards. The recreational viewers around Kwu Tung Service Reservoir will experience only small changes in their views, whereas the workers in the Industrial Zone northeast of Tsung Pak Long will see the general mass of new buildings beyond the Long Valley area and some of their views of rural landscape will possibly be blocked, therefore causing an intermediate change in view. Since these workers have low sensitivity to their viewing experience however, the significance of the impact is still slight.

Fifteen VSRs in the visual assessment give a local perspective of KTN NDA and four of these are predicted experience insignificant impacts due to the Project. Only one group of VSRs will be substantially affected by

the new development; residents of the cottage area at the eastern foothill of the Western Range (K4). These residents are within the boundary of KTN NDA area and some of the houses will be adjacent to the built structures in the NDA. Houses at the northern part of this VSR will be next to a site proposed for a sports ground/sports complex with buildings up to 3 storeys and close to the site proposed for Research and Development buildings in support of Lok Ma Chau Loop Development which reach up to 10 storeys high, and a major change in view is predicted. Similarly houses at the mid and southern part of this area, will be close to a proposed fire station cum ambulance depot with buildings up to 9 storeys high, the proposed district headquarters and police facilities with buildings between 5 and 20 storeys high, a school up to 8 storeys high and a standard swimming pool & sports centre up to 5 storeys high. Many of them will be near the new distributor road also, as well as being able to see the new higher-rise residential blocks up to 35 storeys tall behind, though the residents can still enjoy some sky view and Ki Lun Shan at the south is visible. Overall the views of these highly sensitive VSRs will be largely blocked, the quality of their views will largely be diminished and they will experience substantial impact during construction. In fact, residents at this VSR have their low level views largely blocked by vegetation and existing built structures. At operation, considering the planning mitigation measures (e.g. set back and buffer zones between the buildings) and with the appropriate construction and operation mitigating measures in place, including appropriate façade treatment of the buildings, screen planting, road greening as well as possibly vertical greening and green roofs, the impact is predicted to drop to moderately significant at day 1 onwards.

Six local VSRs, are predicted to experience moderate residual visual impacts at construction: residents in Ma Tso Lung San Tsuen (K1); residents in Ho Sheung Heung (K6); residents in the Long Valley Villages (K9); residents in Valais and Europa Garden New Residential Development Area (K20); travellers along the Fanling Highway and Castle Peak road and over the existing road bridge link over (K19); and cyclists or pedestrians travelling along the cycle track along the riverside near Long Valley (K10). New noise barriers are proposed along this section of the Fanling Highway and works will be carried out to the expressway. Travellers along the Fanling Highway and Castle Peak Road are right next to these works. In addition proposed new tall buildings in the Commercial, Research & Development Area/ Community Facilities Area, Town Centre & North Residential Area will be highly visible (particularly from the footbridge), so these VSRs will experience a large change to their views. The travellers along Fanling Highway, Castle Peak Road and over the existing road bridge link are considered to have low sensitivity and with appropriate treatment of the noise barriers and other mitigation measures mentioned, the significance of residual impacts to this VSR are expected to reduce from moderate (unmitigated) to slight/moderate at operation day 1, and as the soft landscaping mitigation measures mature, drop to slight by year 10. The

highly sensitive residents of the Long Valley villages and medium sensitive travellers along the cycle track alongside the riverside are predicted to experience moderately significant visual impacts at day 1 of operation. Their change in view is intermediate due to the commercial, research and development buildings (all up to 10 storeys high) being evident reasonably close by and residential blocks up to 20 storeys high protruding into the skyline in the middle distance. The villagers of Yin Kong may also be affected by the proposed residential development around Enchi Lodge, including village houses up to 3 storeys high and a 1 storey car park, although this is compatible with the village and so impacts will be mainly during construction. Considering the planning mitigation measures (e.g. set back and buffer zones between the buildings) and with the appropriate construction and operation mitigating measures in place, including appropriate façade treatment of the buildings, screen planting, road greening as well as possibly vertical greening, green roofs and slope landscaping, the visual impact will be ameliorated and is predicted to be slightly significant at year 10 of operation. For residents in Ma Tso Lung San Tsuen, Ho Sheung Heung and Valais and Europa Garden New Residential Development Area, the residual visual impacts are considered to drop to slight at day 1 of operation already and remain slightly significant at year 10. The residents of Ma Tso Lung San Tsuen on the northern boundary of the NDA will be affected mainly by the proposed Research and Development buildings in support of Lok Ma Chau Loop Development which are up to 10 storeys high and very near the village. However given these viewers are mostly at low levels where existing vegetation and existing structures contain the views, the visual changes are only expected to be intermediate here and the significance of visual impact is expected to be slight by year 10 of operation. For residents of Ho Sheung Heung, those further south in the village will experience changes in view due to some of the new buildings (up to 25 storeys) in the adjacent D1-7. Some residents adjacent to a site (D1-5) proposed for village resite (up to 3 storey buildings) may also experience slight changes in view. Overall a very few residents are expected to experience intermediate changes in view, but given the high sensitivity of this VSR, the impact significance before mitigation is moderate. Since most viewers in this VSR will experience less change and with mitigation such as detailed design considerations as well as soft landscaping to screen views of the new structures, the significance of visual impact is expected to reduce to slight by day 1 of operation.

All ten other VSRs are predicted to experience insignificant residual visual impacts at year 10 of operation.

Overall, the design of the KTN NDA has retained much of the high-quality landscape in the area and minimized impacts on features that provide the valley with strong visual quality (i.e. preservation of all the natural upland areas including Fung Kong Shan and the wooded knoll adjacent to Pak Shek Au as well as conservation of the Long Valley area), to retain much of the existing natural view of the areas. The buildings arrangement and the open space areas will allow for view corridors through to the natural

uplands. The location and scale of the proposed development will inevitably result in significant and permanent changes to the existing character of the visual amenity currently enjoyed by the identified VSRs. The majority of these VSRs are villages, many of which will be in close proximity to the NDA. The quality of their views towards the upland areas is high and views towards the rural / industrial development on the lowland areas are generally of a lower quality. The main impacts will arise from the complete change in character from a low-rise rural landscape to high-rise, urban environment and the new development will also be visible from high-rise residential blocks on the northern and western periphery of Sheung Shui and Fanling Area. Given the nature of the Project to create new urban areas, the change is inevitable, but given all the planning considerations and careful implementation of the mitigation measures, most VSRs affected by KTN NDA will experience slight or insignificant residual visual impacts by year 10 of operation.

12.13.2 FLN NDA

FLN NDA is designed as a riverside community to maximise the amenity of having a river flowing through it. The revised RODP design divides the NDA into four character areas (See **Figure 12.10.0.1-2**). There is a Government Facilities Zone in the northwest which has a large area designated to remain untouched as 'Agricultural' land use. The Government Facilities Zone adjoins the West Residential Area in the west which is separated from the District Centre in the southeast by a Civic and Recreation Area reserved for a Central Park, clinic, social welfare and recreational facilities.

As well as dividing FLN NDA into specific areas, the buildings are designed such that those with the highest density and heights are concentrated within the West Residential and District Centre areas on the southern banks of Ng Tung River and so that the intensity and building heights drop gradually as they get closer to Ng Tung River and the Civic and Recreation Area.

An open space system has also been incorporated in the NDA planning to provide a continuous green network across the neighbourhood and create convenient accesses to the riverside promenade either from the NDA development or the existing Fanling/Sheung Shui New Town. The riverfront promenade along Ng Tung River has been planned to be an important element of the open space system in FLN NDA and will also be linked all the way to Long Valley in KTN. In addition, green spines are provided to connect the residential areas to the promenade and Central Park, providing not only green linkages to the recreational resources, but also important physical and visual relief to the residential developments in the NDA as well as existing residential neighbourhoods in the Fanling/Sheung Shui New Town.

The riverside location and the linear configuration of the NDA mean that there is a wealth of opportunity for attractive views and breezeways under the prevailing north-easterly wind and the riverside parks along Ng

Tung River and in the Central Park provide visual and spatial relief in the NDA, with the low rise Central Park providing a large-scale visual and physical break between the two high rise residential neighbourhoods. The Central Park and the north-south running green spines also serve as major view corridors to protect the long-range views toward the hilly slopes in the north.

Figures 12.10.3-5 help to highlight some of these key planning considerations for FLN NDA.

Overall in FLN NDA, the whole area along Ng Tung River is generally low-lying and subject to residual flood level. Filling is proposed up to the existing river bank level and overall FLN NDA will require a net general fill import. The reservoirs in this NDA have been situated to be close to existing reservoirs, where the land has already undergone some modification and the impacts are not as apparent as in KTN NDA.

Landscape Character Areas and Landscape Resources

In terms of the LCAs in FLN NDA, no LCAs are considered to be substantially adversely affected by the Project. The main LCAs affected include Natural Hillside Landscape in this area (FLCA-1), Rural and Urban Peripheral Village Landscape (FLCA-2), Lowland Agricultural Landscape (FLCA-5), and Major Water Course Corridor Landscape (LCA-7) (see **Figure 12.14.0**).

The majority of the FLCA-1 area will remain unaffected by the Project and where it is affected, the land use is largely compatible, although given the area affected is over 15 ha and there will be topographical changes, the magnitude of change is intermediate. This LCA is highly sensitive the intermediate magnitude of change confers a moderate impact. One area where the impact is more obvious is in Site D4-1 where the Flushing Water Service Reservoir will be constructed and there will be some topographical changes. By implementing measures to minimise the topographical changes here and landscape new slopes, as well as generally implementing tree preservation, protection, transplantation and compensation where necessary, as well as providing road greening to the affected roads and considering green roofs, including soft landscaping of the reservoir roof, the impact is considered to reduce to slight at construction and remain slight at operation day 1 and year 10.

Rural and Urban Peripheral Village Landscape (FLCA-2) will experience moderate impact during construction and operation before mitigation. Approximately 30 ha of this LCA is affected by sites designated for land use that is not compatible with the current LCA e.g. mainly a Police Driving and Traffic Training Complex, low density residential sites with buildings up to 15 storeys high, a water service reservoir at Table Hill, as well as roads etc. and the magnitude of change is large. This LCA has medium sensitivity and the impact significance before mitigation is moderate. The change to this LCA from a general rural/ urban peripheral

village landscape to an urban landscape is inevitable given the nature of the Project to provide new town areas.

The necessity of the Project is explained in **Chapters 1 and 2** and the planning of the RODP and the future detailed design of elements are means by which this impact can be avoided and alleviated e.g. through provision of green corridors, consideration of green roofs, provision of adequate space for soft landscaping in developments and alongside roads, careful selection of form, textures and finish colours. There are some trees within this LCA and therefore measures to protect and preserve these, as well as transplant any unavoidably affected, or compensate for them (including in woodland areas), will slightly reduce the impact. Part of the compensatory planting and road greening may also serve as screen planting, but any additional screen planting will also add to the general green nature of the LCA and help alleviate the impact. Although the impact is alleviated, the residual impacts are predicted to remain moderate throughout the Projects construction and operation.

The Lowland Agricultural Landscape in this area (FLCA-5) is predicted to be moderately affected by the Project before any mitigation measures. Careful planning of the revised RODP means large areas at Sites A1-3 and A1-9 to the northwest of the NDA are designated to remain as agricultural land but other areas of agricultural land in FLCA-5 will be irreversibly lost. There is no direct compensation for the agricultural land lost but mitigation includes the possible preservation and protection of any trees and, where unavoidably affected, transplantation or compensatory planting, which will only mitigate the impact very slightly. The loss of agricultural land has been carefully studied for this Project. The setup of the LVNP is a key component of the Project with preservation and even enhancement of agricultural land in that area and considered to go some way to help alleviate impacts on agricultural land. In addition, this LCA encompasses both active and abandoned agricultural land including orchard areas. According to a further review and site inspection in December 2012/January 2013 by PlanD with assistance from AFCD, in the surrounding areas of the Project, 160 ha of land have been found to be potentially suitable for agricultural rehabilitation/re-site. The major cluster (34 ha) is found at Kwu Tung South. Since there is no direct mitigation for the loss of agricultural land, however, the significance of impact on this LCA will remain the same before and after mitigation and therefore the impact will remain moderate throughout.

The Major Water Course Corridor Landscape (FLCA-7) is predicted to experience moderate impacts during construction which drop to slight at operation. This LCA mainly refers to the Ng Tung River and Ma Wat River Channel and the Ng Tung River will be largely unaffected by the Project, if not enhanced by the provision of waterside promenade and some parks along its length. The impact is therefore mainly due to the diversion of the Ma Wat River for the construction of the Fanling Bypass Eastern Section and the magnitude of change is considered to be

intermediate at construction when the diversion takes place but the river is already channelized and at operation will flow through a similar channelized section. By ensuring measure for careful modification of the channelized river channel are implemented the impact on this LCA is considered to reduce to slight at construction and insignificant by day 1 of operation.

Impacts prior to mitigation are slight for the remaining LCAs in this area, namely Urban Development Landscape (FLCA-3), and Major Transportation Corridor Landscape (FLCA-6) and all drop to insignificant by year 10 of operation with mitigation measures. The exception is Industrial Landscape (FLCA-4) which will experience a slight benefit from the Project by day 1 of operation.

A number of LRs in FLN NDA will not be affected by the Project, falling in sites which will remain the same, e.g. Green Belt zones. No LRs are predicted to be substantially affected once all mitigation measures have been implemented. LRs particularly affected by the Project at construction before mitigation in FLN NDA, three LRs detailed below. The residual impact for some of the LRs that are predicted to experience moderate adverse impacts at construction and operation before mitigation are also discussed.

The Ma Wat River (Channelized) (FLR-1.4) is predicted to be substantially affected by the Project before mitigation during construction and moderately so during operation, largely due to the fact that it will be diverted to allow for the construction of the Fanling Bypass Eastern Section (DP10), but will remain as a channelized river i.e. retain the same land use. The Drainage Services Department Practice Note No.1/2005 – *Guidelines on Environmental Considerations for River Channel Design*, should be considered at the detailed design of the new river channel to ensure it matches the existing as far as possible as well as implementing enhancement planting along the new channel including the consideration of wetland planting along embankments where appropriate. The most appropriate materials for the channel lining should also be considered (e.g. gabion). Given these measures, the significance of impact is considered to reduce from substantial to moderate at construction and although the impact will have been partly mitigated at day 1 of operation, it is still considered to be moderate. By year 10 of operation, it will have reduced to slight. Full details of impact and mitigation can be found in **DP Package 12D**.

Planning of the revised RODP has taken care to place much of the Mitigation Wetland in FLN NDA (FLR-4.2). Nevertheless, it is estimated that at worst just under half this LR will be adversely affected by the Project where the Sites are designated for incompatible uses such as a police facility or residential uses etc. Although the absolute area potentially lost is under 3 ha, this is a highly sensitive resource and not widely common, so this is considered to be a large change and the significance of the impact on this LR before mitigation is substantial. Setting up of the LVNP will help mitigate the impact. This LVNP will be

under management and the land there, including marsh and wetland areas, will be enhanced, with a slight increase in wetland areas. Therefore although some mitigation wetland is irreversibly lost in FLN NDA, considering the LVNP enhancement, at construction and operation day 1, the residual impact significance is considered to reduce to moderate. By year 10 when wetland and some marshes in the LVNP confer their full positive effect, the residual impact will have reduced further, but is still considered to be moderate.

Although a relatively small area of Cham Shan and Wa Shan Hillside Woodland (FLR-6.2) is affected by the Project, the change caused is considered large principally due to the number of trees that may be adversely affected. Since the sensitivity of this LR is high, the significance of impact is substantial at construction and operation prior to mitigation. Measures to protect and preserve trees as well as transplant and actively compensated trees, including with woodland plantation, will reduce this impact from substantial to moderate. Since this LR is on hillside, measures to landscape any slopes that are constructed will also help reduce impacts. During operation, the land use will have changed but given the area affected is small and with the implementation of the same mitigation measures the impact will be slight at day 1 of operation. By year 10 of operation, the compensatory woodland planting is considered to have reached its full effect and although the residual impact will have reduced further, it is still considered to be a slight impact.

A very small area (under 1.5 ha) of Shrubland/Grassland Mosaic at Lung Shan (FLR-8.4) will be affected by the Fanling North Flushing Water Services Reservoir in the southeast of the NDA and experience site formation changes as a result of the reservoir construction. Site formation is required with cut/ fill slopes of up to 62 m for the reservoir, reducing to an exposed slope of up to 56 m at completion as some of the slope will be covered by the reservoir. Although the area affected is relatively small and final land topography similar to existing (See **Figure 12.12.7**), the magnitude of change is considered to be large. This LR has medium sensitivity and the impact is substantial prior to mitigation, mainly due to the landform changes (also see **Figure 12.12.9**). Design of the reservoirs is not finalised and their final design should consider minimizing changes to the land form and interference with natural terrain. Retaining walls should also be considered as well as cut slopes, to minimize landform changes. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with surrounding landscape and to mimic the natural contouring and terrain. Landscaping of the reservoir roof and the surrounding reservoir structures will also help to mitigate the impact to the shrubland/ grassland here (no trees will be planted on the roof itself) by creating a green vegetated area rather than hardscape surface. Planting of climbers to grow up vertical surfaces where appropriate could also soften any wall structures. By implementing all these measures as well as taking care to landscape any slopes that are formed and implement protection,

preservation, transplantation and compensatory planting for trees, the impact on this LR is considered to reduce to moderate at construction and slight at operation day 1 (the topography will be similar to the existing as there is a steep slope in this area already, as shown in **Figure 12.12.7**). Although soft landscaping will mature and confer greater mitigation by year 10 of operation, the impact is considered to remain as slight by year 10.

The LR's which are predicted to experience moderate adverse impacts at construction before mitigation are elaborated below.

The Water Course through Ma Shi Po Agricultural Land (Channelized) (FLR-1.5) although it is only of medium sensitivity, will be totally lost prior to mitigation and therefore suffer moderate impact. Given this watercourse is permanently lost, and will not be reprovisioned (only a drainage system will be provided) the significance of the impact is not considered to reduce and therefore will remain as moderate, even at year 10 of operation.

The Natural Stream in Tin Ping Shan Agricultural Land (FLR-2.1) is predicted to be unavoidably affected by the Project, filled and permanently lost, hence undergoing large change. This stream, however, largely flows through developed areas and is near an open storage area. It has become degraded by pollution as well as having banks in some sections fortified with concrete. Therefore the stream has medium sensitivity and the significance of impact is considered moderate before mitigation. The residual impact on this particular stream cannot be directly mitigated and therefore the significance of impact will remain moderate since as it will be permanently lost.

The Natural Streams at Siu Hang San Tsuen (FLR-2.4) will suffer a small change due to the Project (where it flows under the Fanling Bypass Eastern Section) and given this LR has high sensitivity, this is considered a moderately significant impact. The affected stream at Siu Hang San Tsuen in FLN NDA, has largely been protected by changes to the proposed NDA boundary during the planning of the revised RODP with much of this stream excluded from the NDA. However the stretch of this stream within the NDA boundary would be located underneath the viaduct for the proposed Fanling Bypass Eastern Section. To the south of the viaduct the stream flows through the area D1-3, zoned as Open Space, prior to joining Ng Tung River. In this Open Space Zone a 10m buffer is proposed in which natural vegetation will be retained and enhanced and human activities will be limited in order to avoid direct impacts to the stream bed and to minimise potential indirect impacts to the stream and riparian corridor. At detailed design, in order to avoid impacts to the stream, the detailed final design of the viaduct should follow guidelines such as ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/rivers from adverse impacts arising from construction works as well as Building Department (BD) Practice Note for Authorized Persons and Registered Structural Engineers 295: Protection of natural streams/rivers from adverse impacts arising from construction

works. This will ensure that no viaduct footings or other structures are places in the stream and overall the impact is considered to reduce to slight at construction and operation day 1, becoming insignificant by year 10 of operation.

Only a very small area (under 0.5ha) of Sheung Shui Water Treatment Works Hillside Woodland (FLR-6.1) and even smaller area of Hillside Woodland at Lung Shan and Wa Mei Shan (FLR-6.4) are adversely affected by the Project and there is potential loss of trees in these areas leading to a small change to the LRs. Given these LRs are considered highly sensitive, the significance of the impact before mitigation is moderate. Woodland in these areas is most likely to be adversely impacted during site clearance and site formation in the construction phase and measures to protect and preserve trees, as well as transplant and actively compensate them with woodland plantation, will reduce this impact. Since this LR is on hillside, measures to landscape any slopes that are constructed will also help reduce impacts. The impact is considered to reduce to slight at construction and operation day 1, and become insignificant by year 10 when the compensatory woodland planting will have matured to its full potential.

Two lowland woodland LRs are considered the experience moderately significant adverse impacts due to the Project; the Lowland Woodland at Fu Tei Au and Sheung Shui Water Treatment Works (FLR-7.2) where under 2 ha of the LR is adversely affected, and the Sacred Hill Lowland Woodland (FLR-7.4), where just over 1 ha is adversely affected, due to incompatible land uses, including a police driving and traffic complex, residential and educational developments etc. Measures to protect and preserve trees, transplant and actively compensate trees, including with woodland plantation, will reduce this impact and the residual impact upon mitigation for these LRs is considered to reduce to slight at day 1 operation. With the compensatory woodland planting reaching its full potential by year 10 of operation, the impact will reduce further but the significance is still considered to be slight.

A very small area (under 1 ha) of Shrubland/Grassland Mosaic at Cham Shan and Wa Shan (FLR-8.3) will be affected by part of the Fanling North Fresh Water Services Reservoir in the north of the NDA and its access road. This LR will experience site formation changes as a result of the construction of the reservoir and access road. The reservoir requires site formation with cut/fill slopes of up to 24 m, reducing to an exposed slope of up to 18 m at completion. Although the area affected is relatively very small, the magnitude of change is considered intermediate given the landform changes (See **Figures 12.12.6 and 12.12.8**). This LR has medium sensitivity and prior to mitigation the impact significance is moderate at construction and operation. Design of the reservoirs is not finalised and their final design should consider minimizing changes to the land form and interference with natural terrain. Retaining walls should also be considered as well as cut slopes, to minimize landform changes for the road and reservoir construction.

Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with surrounding landscape and to mimic the natural contouring and terrain. Landscaping of the reservoir roof and the surrounding reservoir structures will also help to mitigate the impact to the shrubland/ grassland here (no trees will be planted on the roof itself) by creating a green vegetated area rather than hardscape surface. Planting of climbers to grow up vertical surfaces where appropriate could also soften any wall structures. By implementing all these measures as well as taking care to landscape any slopes that are formed and implement protection, preservation, transplantation and compensatory planting for trees, the impact on this LR is considered to reduce to slight at construction and operation day 1. With soft landscaping maturing and conferring greater mitigation by year 10 of operation, the impact is considered to reduce to insignificant by year 10.

A number of agricultural land LRs are predicted to be moderately affected by the Project, with large changes in Fu Tei Au Agricultural Land (FLR-9.2), Tin Ping Shan Tsuen Agricultural Land (FLR-9.4) and Agricultural Land in Wu Nga Lok Yeung, Siu Hang San Tsuen, Siu Hang Tsuen and Lung Yeuk Tau (FLR-9.6), and an intermediate change in Agricultural Land at Sheung Shui Wa Shan (FLR-9.5) mainly due to the small area affected. Careful planning of the revised RODP means large areas at Sites A1-3 and A1-9 to the northwest of the NDA are designated to remain as agricultural land but in other areas of this LR in FLR-9.2, FLR-9.4, FLR-9.6 and FLR-9.5, agricultural land will be irreversibly lost. There is no direct compensation for the agricultural land lost but mitigation includes the possible preservation and protection of any trees in such LRs and where unavoidably affected, transplantation or compensatory planting which will only mitigate the impact very slightly. The loss of agricultural land has been carefully studied for this Project. The setup of the LVNP is a key component of the Project with preservation and even enhancement of agricultural land in that area, and considered to go some way to alleviate impacts on agricultural land. In addition, this broad agricultural land category (LR9) encompasses both existing active and abandoned agricultural land including orchard areas. According to a further review and site inspection in December 2012/January 2013 by PlanD with assistance from AFCD, the amount of active agricultural land affected by the Project in FLN NDA is approximately 24 ha. According to the AFCD Annual Report 2011-2012, there are 4,071 ha of abandoned agricultural land in Hong Kong and 734 ha of active agricultural farmland and as such, the affected agricultural land represents a small percentage of active agriculture land in Hong Kong. In the surrounding areas of the Project, 160 ha of land have been found potentially suitable for agricultural rehabilitation/re-site in the above mentioned site inspection. The major cluster (34 ha) is found at Kwu Tung South. Since there is no direct mitigation for the loss of agricultural land, the significance of impact on agricultural land in these LRs will remain the same before and after mitigation and therefore the impact will remain moderate throughout.

Rural Development Areas in the North of FLN NDA (FLR-12.3) and around Ma Shi Po (FLR-12.8) are moderately affected by the Project prior to mitigation. A small area of FLR-12.3 will be affected by site A3-1, which is proposed as the Fanling North Fresh Water Service Reservoir, and its access road. The LR here is mainly composed of the existing Firing Range with Fresh Water Service reservoir underneath and its access road, and has undergone some site formation already for the construction of these structures. The proposed highest cut/ fill slopes for the new developments will be 24 m with a maximum 40 degree angle for all slopes and the exposed slope at completion will be up to 18 m high. There will therefore be some topography changes in this area as **Figures 12.12.6 and 12.12.8** help illustrate and despite the area affected being small, the magnitude of change is considered to be intermediate at construction and operation prior to mitigation. This LR has medium sensitivity so the impacts significance is moderate. Design of the reservoir is not finalised and the final design should consider minimizing changes to the land form and interference with natural terrain. Retaining walls should also be considered as well as cut slopes, to minimize landform changes. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with surrounding landscape and to mimic the natural contouring and terrain. Landscaping of the reservoir roof (no trees will be planted on the roof itself), the surrounding reservoir structures and the access road will also mitigate the impact thereby creating a green vegetated area rather than hardscape surface. Planting of climbers to grow up vertical surfaces where appropriate could also soften any wall structures. By implementing all these measures as well as taking care to landscape any slopes that are formed and implement protection, preservation, transplantation and compensatory planting for trees, the impact on this LR is considered to reduce to slight by operation day 1. By year 10 of operation, when all mitigation measures will have matured and confer their full effect, the impact is considered to reduce further, but still be rated slight.

All the Rural Development Area around Ma Shi Po (FLR-12.8) falls within the RODP boundary and will be affected by the Project that are largely incompatible with this LR, such as buildings for government uses, general clinic/ health centre, residential developments, schools and road. This LR has medium sensitivity and the area of this LR lost is approximately 13 ha. Overall the significance of the impact is considered to be moderate before mitigation. The loss of this LR is inevitable given the nature of the Project to provide new town areas. The need of the Project is explained in **Chapters 1 and 2** and the planning of the revised RODP and the future detailed design of elements are means by which this impact can be avoided and alleviated e.g. through provision of green corridors. There are some trees within this LR and therefore measures to protect and preserve these, as well as transplant any unavoidably affected, or compensate for them, will slightly reduce the impact. Equally the roadside planting, which may form part of the compensatory planting,

will also enhance the greenery of the LR and provide the new landscape corridors. Although the residual impact upon mitigation for this LR is considered to reduce slightly, the rating is still considered to remain moderate at all stages of the Project.

A number of LRs will not be affected by the Project, but for remaining LRs which are affected, slightly adverse or insignificant residual impacts are predicted by day 1 of operation with the proper implementation of the suggested mitigation measures, except for the industrial/ open storage LRs which will experience benefits due to the Project.

Visual Impact

From a visual perspective, four strategic VSRs were selected to assess the overall impact of FLN NDA from sites farther away that would get a good overall view towards the NDA (see **Figure 12.19.0**). These included the Tai Shek Mo Footpath & Lookout (F30) to the north west of the FLN NDA visual envelope (Looking south east to take in both FLN and KTN NDAs), Ki Lun Shan Footpath (F28) far away to the south west of the visual envelope (with KTN also visible closer by), Wu Tip Shan Lookout (F29) to the far south and Tsung Shan, High Hill (F3) closer by to the north east of the visual envelope. All these sites are predicted to have recreational viewers.

With all the planning mitigation measures described incorporated into the revised FLN RODP (e.g. comprehensive green network, visual connections, graduation of building heights, setbacks from buildings, buffer zones) to increase its compatibility with the surrounding environment, as well as general construction and operation mitigation measures such as appropriate treatment of building façades, light control and general soft landscaping including green roofs, road greening, screen planting, vertical greening, tree protection, transplantation and compensation, slope greening, FLN NDA is predicted to cause a slight impact at year 10 to all these viewers. Viewers at Ki Lun Shan footpath are far away and only have a number of places on the footpath where there are views to FLN NDA that are not obstructed by the vegetation. With mitigation at year 10 although FLN NDA is thought to be insignificant to them visually, KTN NDA will be more prominent closer by and the significance of the visual impact experienced is still predicted to be slight.

Five VSRs in the visual assessment give a district perspective of FLN NDA: higher rise Belair Monte & Regentville (F11), Noble Hill (F15), Ka Fuk Estate Area (F18) and around Ting Ping Estate (F20), as well as workers in the industrial zone southwest of Sheung Shui Wai (F25).

Two of these VSR groups, 'Belair Monte & Regentville' and 'High Rise Residential Buildings around Tin Ping Estate', are predicted to experience substantial residual visual impacts at construction and substantial or moderate/substantial residual visual impacts at operation day 1. VSRs in Noble Hill are also predicted to experience moderate/substantial residual visual impacts at construction and operation day 1,

upon implementation of mitigation measures. These three worst affected district VSR groups are all high rise residential blocks relatively close the NDA with high sensitivity. These three VSRs groups generally have open existing views over the green rural area south of Ng Tung River which will undergo significant land use change to become an urban area with many high rise residential blocks and supporting facilities, although preservation of a large woodland area between On Kwok Villa and Noble Hill and the roadside trees along Ting Ping Road help to soften the visual intrusion of the NDA development. Residents of Noble Hill will be relatively less affected as their views towards the Town Park(which is slightly more compatible with the existing view) will be closer in their line of sight. The planning of view corridors to allow views out to the green hills north of the river, setbacks, buffers will all help to mitigate the visual impact. Some of the soft landscaping in the open spaces surrounding the residential blocks, in particular the open space strip at Site D3-5 at the northwest of Belair Monte and Regentville, where extensive soft and hard landscaping will be provided by planting significant trees and vegetation as well as providing a water feature, will also be significant in mitigating the visual impact. Given these considerations, by year 10, when soft landscape measures convey their full mitigation effect and provide visual relief, the significance of impacts will reduce to moderate (F15 and F20) or moderate/substantial (F11).

One other district VSR group is predicted to experience moderately significant impacts still at year 10 of operation; the residents of traditional village houses around Ma Wat Tsuen Area who are also considered highly sensitive to change. They will mainly be affected by changes in their views caused by the high rise residential buildings up to 35 storeys high in the District Centre area at the east of the NDA which will partially block their distant views. Although magnitude of change in view for this VSR group is intermediate, given their highly sensitive nature, the significance of impact is moderate and is not thought to reduce significantly over time.

Residual impacts on the remaining two district VSRs at year 10 of operation are slight after mitigation for residents in the Ka Fuk Estate area who are highly sensitive but experience only a small change in view, and insignificant for workers in the Industrial Zone southwest of Sheung Shui Wai who have low sensitivity and experience intermediate change in view which over time will be mitigated by the design and soft landscaping measures described previously.

Twenty VSRs in the visual assessment give a local perspective of FLN NDA and in addition residents in the lower rise Ma Wat Tsuen Area (F7) have a local perspective for those living near the Ma Wat River Channel but a district perspective for those further away, such as the VP selected to give an overview for photomontage. One of these VSRs is predicted to experience almost no change due to the Project (residents around Po Kat Tsai (F10)) and seven in total are predicted to experience insignificant residual impacts by year 10 of operation.

Three groups of local VSRs and the local/district VSR will be substantially affected by the new development at construction, even upon implementation of mitigation measures these are residents in the Kan Lung Tsuen traditional village area (F5), residents in the Wing Fai and Wing Fok Centres (F12) and residents in Shung Him Tong (F8) as well as residents in the lower rise Ma Wat Tsuen Area (F7). All these VSR groups are just outside FLN NDA and are highly sensitive. For F5 and F12, views of open agricultural area will undergo major change to a high rise (up to 35 storeys) urban area for residents in the Kan Lung Tsuen traditional village area. Although views north to the foothills of Wa Shan will remain unaffected, the mass of new high rise buildings in the NDA is nearby and will generally dominate views. The new elevated Fanling Bypass Eastern Section and associated noise barriers will also change their view noticeably. The significance of the residual impacts for these viewers in F5 will remain substantial at day 1 of operation. Residents in the Wing Fai and Wing Fok Centres are also close by the District Centre area where high rise residential buildings up to 35 storeys, and two schools up to 8 storeys, are proposed close-by along Ma Sik Road. These residents of F12, like those of F5, will be affected largely by the change in view from a rural to an urban area, although the proposed lower rise schools would provide a visual break between the high rise residential buildings. The significance of residual impact is predicted remain substantial at operation day 1 after implementing mitigation measures, including, road greening as well as façade treatment, and visual planning measures described previously (e.g. view corridors, green network, etc.). Two view corridors to the green hills at north of Ng Tung River will provide visual relief for the residents. In addition, soft landscaping measures such as screen planting, green roof, vertical greening and compensatory planting will all be fully effective by year 10 of operation providing visual relief and at this point the significance of residual visual impact will reduce to moderate for these two VSRs. Residents in the lower rise Ma Wat Tsuen Area (F7) and in Shung Him Tong (F8), although they will not be affected much by the developments in the FLN NDA itself, will experience large changes in view due to the Fanling Bypass Eastern Section and the diversion of the Ma Wat River Channel as these new developments (both associated with FLN NDA) run close to the western edge of this village areas and will be apparent in their view, especially the elevated Fanling Bypass. Mitigation measures to protect and preserve any trees in this area which might block views of the Fanling Highway, as well as any planting to screen views would help mitigation these impacts during construction and additionally any measures directed at alleviating the visual impact of the Fanling Bypass, such as sensitive detailed design of any noise barriers, vertical greening of viaduct piers or other visible structures and roadside greening would all help alleviate the visual impact experienced by these VSR groups. Similarly by sensitive detailed design of the Ma Wat River Channel diversion, to ensure it matches the existing as far as possible and its visual amenity is improved by such means as enhancement planting to

upgrade the channels as appropriate, the visual impact of this development will be improved. Therefore significance of the residual impacts for these views is considered to reduce to moderate/ substantial at day 1 of operation, and moderate by year 10 when all soft landscaping measures have had time to mature and confer their full effect.

Ten local VSR groups are predicted to experience moderate residual visual impact during construction, but all of these will reduce to only slightly significant by year 10 of the FLN NDA operation with the exception of VSRs in the Good View New Village and Ling Shan Tsuen (F14) who may still experience slight to moderately significant impacts at year 10.

For all other local VSR groups, the significance of residual visual impact caused by FLN NDA after mitigation during construction is considered to be slight and reduce to insignificant by year 10 of operation.

The existing landscape features and general planning considerations outlined in **Section 12.5.2** have guided the location of FLN NDA, however, the development of FLN NDA will lead to a fundamental change in the character and extent of the existing views, and change in visual amenity. Medium and long distance views of a rural landscape characterized by low-lying traditional agricultural fields and village areas will be replaced by a large scale, urban area with a strong vertical habit and views of the uplands to the north of the Fanling / Sheung Shui urban area will also be interrupted by the proposed new structures. Given the nature of the Project to create new urban areas, the change is inevitable, but given all the planning considerations and careful implementation of the mitigation measures, most VSRs affected by FLN NDA will experience slight or insignificant residual visual impacts by year 10 of operation.

12.13.3 Cumulative Impacts

The Project is targeted to start advance works and the first stages of construction in 2017 ⁽¹⁾ and be finalised in 2029 according to the current construction programme (See **Chapter 2**). **Chapter 2** of the EIA Report also evaluates potential concurrent projects, as summarised in **Section 2.2, Table 2.12** and concludes that a number of these projects should be assessed for cumulative impacts. The Schedule 2 DPs within, and associated with, the KTN and FLN NDAs might also be considered concurrent projects, but these are fully evaluated in **DP Packages 12A-D**.

Further review in **Section 12.3.2** shows that just two separate projects should be reviewed for cumulative impacts with the Project in the Schedule 3 Impact Assessment, and further analysis on these is provided below.

⁽¹⁾ Works period of site formation for lots subject to village removal term, is not included.

Agreement No. CE53/2008(CE) Planning and Engineering Study on Development of Lok Ma Chau Loop – Investigation

The Development of the Lok Ma Chau (LMC) Loop comprises the buildings, landscape and supporting infrastructure within and adjacent to the site (See **Figures 2.21 and 2.22**). The LMC Loop project is a joint study between Hong Kong and Shenzhen of an 87 ha site to the northwest of the KTN NDA, bounded by the new and old channel of the Shenzhen River. The focus of the LMC Loop Study is to develop the site for higher education, high tech research & development and the cultural and creative industries. The overall objective is to formulate a comprehensive development plan for the site with a view to creating a sustainable, environmentally friendly, energy efficient and people oriented community.

The LMC Loop Eastern Connection Road (ECR) connects to KTN NDA; where it links with the KTN NDA road R1 south of Ma Tso Lung. The construction programmes of the projects are likely to be run concurrently and therefore the cumulative landscape and visual impact has been assessed for both construction and operational phases below, using the information available regarding the LMC Loop project. Note that the LMC Loop EIA has been formally submitted to EPD and at the time of writing is still under consideration^[1] and therefore not final.

In terms of landscape, LRs within the LMC Loop project area with relatively higher sensitivity include mixed woodland, fishponds, natural streams, natural rivers and marsh and the LCAs with relatively higher sensitivity are all lowland rural landscape in various locations. It is predicted that the LMC Loop project will only substantially affect marsh LR in the Loop area and this will be alleviated through appropriate mitigation including the establishment of an Ecological Area and creation of a new marshland area, such that overall the impact will not be significant. Neither the area of marsh affected nor the Ecological Areas fall within the NENT NDA, and no cumulative impact is predicted for this LR. The LRs where the projects connect are principally shrubland and woodland with some lowland areas near the stream in that area being seasonally marsh/wetland. With the implementation of appropriate mitigation measures for each project, the cumulative LR impacts are considered to be acceptable. The key mitigation measure for this area will be the integration, as far as technically feasible, of the new roads with the existing lowland landscape, the preservation of trees and woodland as far as possible given all technical considerations and roadside planting.

In addition both projects, prior to mitigation, have notable impacts on less developed lowland rural LCAs and 'Rural and Urban Peripheral Village Landscape' LCA. Although cumulatively a greater area of this LCA type will be affected, both projects will implement relevant mitigation (such as careful detailed design, protecting, preserving, transplanting and

^[1] Available at <http://www.epd.gov.hk/eia/english/register/index3/all.html>. Accessed 24 May 2013

compensating for trees; compensating specifically for any areas of woodland unavoidably affected and greening roads) such that overall at year 10 of operation the impacts are acceptable. Since the projects do not overlap, it is considered that cumulative impacts on LCAs are acceptable with the implementation of mitigation measures.

In addition the LMC Loop project will change the visual amenity of the area due to the implementation of the proposed developments and the road connection networks. It is likely that only people at the LMC border control point and residents of Ha Wan Tsuen and LMC village would be significantly affected by the LMC Loop project and none of these VSRs have views to the Project so will not suffer any cumulative impact. In general the LMC Loop project is shielded from view from the Project, with the Western Ranges generally blocking lower level views between the two areas. Only VSRs to the south east of the LMC Loop project and north-west of KTN NDA will have views of both projects, where the topography is flatter. These VSRs include residents of Shun Yee San Tsuen and Ma Tso Lung San Tsuen and the change in view they experience is likely to be slightly larger if considering both projects together. However, relevant mitigation measures such as the responsive design of road connecting the two projects (alignment responding to the lowland context of the area), landscaping measures such as screen planting, vertical greening and green roofs to soften the built and engineering structures as well as tree preservation and roadside planting will all help to alleviate the visual impacts to slight or insignificant levels and overall the cumulative visual impacts from these two projects are considered to be acceptable with mitigation.

These two projects do not overlap in area, but do connect via the ECR. Although no cumulative impacts are predicted with the implementation of relevant mitigation measures, it is advised that a coordinated approach be undertaken between these projects, to reduce potential impacts in terms of both magnitude and the period of disturbance during construction.

Construction of cycle tracks and the associated supporting facilities from Sha Po Tsuen to Shek Sheung River (EIA 159/2008)

Figures 2.21 and 2.22 show the location of this project in relation to the KTN and FLN NDAs development. Based on current information, the proposed extent of cycle track works within the KTN and FLN NDAs Study Area is limited and the majority of the works area will be reinstated to its original status or new amenity area. The project also proposed measures to minimise potential impacts on landscape resources such as watercourses and existing trees by review the alignment and location of associated facilities, through limiting necessary crossing over the river or drainage channels including Kam Tin River and Sheung Yue River, and preserving wooded knolls including those adjacent to Kwu Tung. Planting of large feature and ornamental trees following the completion of the construction phase of the project, is also proposed to create an instant greening effect and enhance the streetscape of Castle Peak Road, San

Tin Tsuen Road, San Tin and Fanling Highways etc.. There is a 5-20m buffer zone between Resting Stations and major roads (such as Castle Peak Road and Fanling Highway) and their scale is minimised, all to provide a better visual integration between proposed facilities and their neighbourhood rural fringe landscape characters.

Therefore it is considered that this project will not lead to further degradation of either the landscape character or visual amenity of the Project.

12.13.4 Overall Conclusion

This Section provides the overall conclusion of the Schedule 3 LVIA for KTN and FLN NDAs.

In general, rural and urban peripheral villages is the major landscape resources and landscape character area which experience substantially significant impacts before the implementation of mitigation measures and agricultural land will generally experience moderate impacts. Most of the high density residential buildings and other associated facilities are proposed on these landscapes and the impact significance is generally predicted to still be moderate there after 10 years of operation.

Other landscape resources which also experience moderate levels of impact even after the implementation of mitigation measures, include streams in Kwu Tung (KLR2.1) and the Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang (KLR-12.9) in KTN NDA, and in FLN NDA include Natural Streams in Tin Ping Shan Agricultural Land (FLR-2.1) as well as agricultural land in Ting Ping Shan Tsuen (FLR-9.4) and Wu Nga Lok Yeung, Siu Hang San Tsuen, Siu Hang Tsuen and Lung Yeuk Tau (FLR-9.6). These streams and the agricultural land will be permanently lost permanently during construction and therefore the impact will stay moderate during operation. The loss of agricultural land has been carefully studied for this Project and the setup of the LVNP and preservation and even enhancement of agricultural land in that area, as well as zoning of large sites to the north and south of LVNP as agricultural land, is considered to go some way to help alleviate impacts on agricultural land. In addition, the LVIA assessment has included both active and abandoned agricultural land including orchard areas in its classification of agricultural land and according to a further review and site inspection in December 2012/January 2013 by PlanD with assistance from AFCD, the amount of active agricultural land affected by the Project is approximately 28 ha. According to the AFCD Annual Report 2011-2012, there are 4,071 ha of abandoned agricultural land in Hong Kong and 734 ha of active agricultural farmland and as such, the affected agricultural land only represents a small percentage of active agriculture land in Hong Kong. In the surrounding areas of the Project, 160 ha of land have been found potentially suitable for agricultural rehabilitation/re-site, the major cluster (34 ha) being found at Kwu Tung South. Given all these considerations, and understanding the

need of the Project, the significance of impacts on agricultural land are thought to be acceptable.

For the rural development area in KTN NDA, over 30 ha will change land use and despite careful planning and implementation of mitigation, the change to an urban landscape is hard to mitigate for. The need of the Project is explained in **Chapters 1 and 2** and the planning of the RODP and the future detailed design of elements are key means by which this impact can be alleviated.

Most of the other landscape impacts can be reduced to slight and insignificant after the implementation and full establishment of mitigation measures.

Given the proposed development involves major land use changes for a new town development in an existing rural area, it is inevitable that visual (and some landscape) impacts caused by such major development cannot be fully reduced and remain at a certain level at some locations even after implementation of all possible mitigation measures, including minimizing topographical change, detailed design of the built structures to ensure compatibility of the proposed development with the existing surroundings, tree protection, preservation and transplantation as well as compensatory planting, woodland compensatory planting, screen planting to buffer structures from views, decorative hoarding to screen undesirable views of work sites, light control within construction sites and at operation to reduce light glare that could potentially cause visual disturbance to VSRs at night time, provision for green roofs and vertical greening to soften hard surfaces on built structures in sight. Particular care has been taken to conserve the Long Valley area with its agricultural land and ponds. This will also help mitigate for any marsh and wetland loss due to the Project that will occur under the Long Valley Nature Park Management Plan. Additionally the NDAs have been carefully designed to try and avoid natural watercourses by avoiding development at the most sensitive streams or designating protective zoning to preserve them, and designating buffer areas along key stretches. In view of the nature of the development, it is generally fair to accept that some of the impacts cannot be fully reduced and will only remain at a certain level for some areas. Nevertheless, such residual impacts are predicted to be acceptable with implementation of the proposed mitigation measures as the changes in land uses gradually adapt to the existing rural context. Besides, residual impacts are generally only slight or insignificant for the majority of the other LRs, LCAs and VSRs within the NDAs as a large extent of the impacts caused by the developments will be reduced or eliminated by the implementation of the proposed mitigation measures.

It is therefore anticipated that given the need of the Project as explained in **Chapters 1 and 2** and assuming the implementation of the measures described, the overall residual landscape and visual impacts from the Project are considered acceptable. Therefore the Project is 'acceptable with mitigation measures' in accordance with the EIAO TM Annex 10.

12.14 LVIA for Schedule 2 Designated Projects – General Introduction

The following sections (12A, 12B, 12C and 12D) identify the potential landscape and visual impacts associated with the Schedule 2 Designated Projects (DPs) forming part of the NDAs within KTN and FLN, in accordance with the *Environmental Impact Assessment Ordinance*. Construction and operation phase impacts have been assessed.

The assessment includes:

- a list of the relevant environmental legislation, standards and guidelines;
- a definition of the scope and contents of the Study including a description of the assessment methodology;
- a review of the relevant planning and development control framework;
- a baseline study providing a comprehensive and accurate description of the baseline landscape and visual character, including sensitivities of potentially sensitive receivers (SRs);
- identification of potential landscape and visual impacts and prediction of their sensitivity, magnitude and potential significance, before mitigation measures;
- identification of the significance of potential residual landscape and visual impacts;
- recommendation of appropriate mitigation measures and associated implementation programmes; and
- an assessment of the acceptability or otherwise of the predicted residual impacts, according to the five criteria set out in Annex 10 of the EIAO-TM, namely beneficial, acceptable, acceptable with mitigation measures, unacceptable or undetermined.

Colour photographs showing baseline conditions are provided along with other illustrative materials and potential impacts are clearly mapped. The mitigation measures proposed for the potential impacts identified are described and illustrated with annotations, with cross referencing between text, tables and illustrations. To help support conclusions, photomontages are provided from selected, representative Vantage Points (VPs), to offer comparison between existing views; proposals on Day 1 of operation without mitigation, on Day 1 of operation with mitigation and at Year 10 of operation with mitigation.

12.15 Environmental Legislation, Standards and Guidelines

The following legislation, standards and guidelines are applicable to this LVIA associated with the construction and operation of the Schedule 2 DPs:

- Environmental Impact Assessment Ordinance (Cap. 499. S16) and the Technical Memorandum on EIA Process (EIAO-TM), particularly Annexes 10 (Criteria for Evaluating Visual and Landscape Impact, and Impact on Sites of Cultural Heritage) and 18 (Guidelines for Landscape and Visual Impact Assessment);
- Environmental Impact Assessment Ordinance Guidance Note 8/2010 (Preparation of Landscape and Visual Impact Assessment under the Environmental Impact Assessment Ordinance);
- Town Planning Ordinance (Cap131) and Town Planning (Amendment) Ordinance;
- Hong Kong Planning Standards and Guidelines (HKPSG) issued by the Planning Department, in particular Chapters 4, 10, 11 and Section 7 in Chapter 12 (As at August 2011);
- Land Administration Office Instruction (LAOI) Section D-12 Tree Preservation;
- Development Bureau TCW No. 2/2012 – Allocation of Space for Quality Greening on Roads;
- Development Bureau TCW No. 3/2012 – Site Coverage of Greenery for Government Building Projects;
- Development Bureau TCW No. 2/2013 – Greening on Footbridges and Flyovers;
- Development Bureau, Greening, Landscape and Tree Management Section (GLTM) April 2012 – Guidelines on Greening of Noise Barriers;
- ETWB TCW No. 2/2004 – Maintenance of Vegetation and Hard Landscape Features;
- ETWB TCW No. 11/2004 – Cyber Manual for Greening;
- ETWB TCW No. 29/2004 – Registration of Old and Valuable Trees, and Guidelines for their Preservation;
- ETWB TCW No. 36/2004 – The Advisory Committee on the Appearance of Bridges and Associated Structures (ACABAS), including Appendix A ‘Guidelines for Submissions to ACABAS’;
- ETWB TCW No. 5/2005 – Protection of Natural Streams/Rivers from Adverse Impacts Arising from Construction works;
- ETWB TCW No. 3/2006 – Tree Preservation;
- Urban Design Guidelines for Hong Kong issued by the Planning Department (2003);

- Study on Landscape Value Mapping of Hong Kong⁽¹⁾;
- WBTC No. 25/92 – Allocation of Space for Urban Street Trees;
- WBTC No. 7/2002 – Tree Planting in Public Works;
- GEO publication (1999) – Use of Vegetation as Surface Protection on Slopes; and
- GEO 1/2011 – Technical Guidelines on Landscaping Treatment for Slopes.
- HyD HQ/GN/13 - Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit.
- HQ/GN/15 - Guidelines for Greening Works along Highways

12.16 Scope of the Study

The schedule 2 DPs provide the key infrastructure to support the development of the KTN and FLN NDAs. The nature and extent of these projects is described in **Section 2.5** of this report. There are numerous different components to the infrastructure works which will be commissioned in phases in line with the construction of the NDAs, a timeline is provided in **Table 12.16.1** below.

Table 12.16.1 - Construction Programme

Development Package	Description	Work Period	Description of Work
Advance Works	Infrastructure and development of Advance Works at KTN and FLN	2016 - 2024	<ul style="list-style-type: none"> • Site formation and infrastructure • Fanling Bypass (Eastern Section) • Management of Stockpiling material
1	First stage of infrastructure and development at KTN and FLN	2016 - 2023	<ul style="list-style-type: none"> • Site formation and infrastructure • Ecological compensation works • Sewerage and water supply networks • School, hospital, HKPF facilities and housing site • Fanling Bypass (Eastern Section) • STW Extension Phase 1B at FLN

⁽¹⁾ PlanD. *Landscape Value Mapping of Hong Kong Final Report*. Available at: http://www.pland.gov.hk/pland_en/p_study/prog_s/landscape/landscape_final/index.html [Accessed 6 February 2013]

Development Package	Description	Work Period	Description of Work
			<ul style="list-style-type: none"> • Village resite in KTN and FLN • Secondary service reservoir • Trunk mains and distribution mains
2	Infrastructure and development at KTN (South)	2018 - 2029	<ul style="list-style-type: none"> • Site formation and infrastructure • Fanling Highway Widening • Kwu Tung Interchange • Pak Shek Au Interchange
3	Infrastructure and development at KTN (North)	2020 - 2028	<ul style="list-style-type: none"> • Site formation and infrastructure
4	Remaining Infrastructure and development at FLN (East)	2021 – 2029	<ul style="list-style-type: none"> • Site formation and infrastructure • Secondary service reservoir • Trunk mains and distribution mains • Fanling Bypass (Western Section) • Po Shek Wu Interchange Improvement
5	Remaining Infrastructure and development at FLN (West)	2022 - 2028	<ul style="list-style-type: none"> • Site formation and infrastructure • STW Extension Phase 2

The schedule 2 DPs have been grouped based on their category and location (KTN/FLN), a complete list of these projects is provided in **Table 12.16.2** below. A full description of each of the DPs is provided in Chapter 2 **Section 2.4**.

Table 12.16.2 Schedule 2 DP Package A, B, C and D

DP	Work Component	Schedule 2 DP Category	
DP Package A			
1	San Tin Highway and Fanling Highway Kwu Tung Section Widening (between San Tin Interchange).	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road
2	Castle Peak Road Diversion (Major Improvement)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.
3	KTN NDA Road P1 and P2 (New Road) and associated new Kwu Tung Interchange (New Road) and Pak Shek Au Interchange Improvement (Major Improvement)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.
4	KTN NDA Road D1 to D5 (New Road)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.
DP Package B			
5	New Sewage Pumping Stations (SPS) in KTN NDA	F3	<p>A sewage pumping station---(b) with an installed capacity of more than 2000 m3 per day and a boundary of which is less than 150 m from an existing or planned residential area or educational institution.</p> <p>2no. SPS are proposed in KTN, these are:</p> <p>SPS south of Ma Tso Lung.</p> <p>SPS south of Ho Sheung Heung.</p>
DP Package C			
7	Utilization of Treated Sewage Effluent from Shek Wu Hui Sewage Treatment Works (SWHSTW)	F4	<p>An activity for the reuse of treated sewage effluent from a treatment plant.</p> <p>Three facilities are included:</p> <p>Site for utilisation of TSE at Shek Wu</p>

DP	Work Component	Schedule 2 DP Category	
			Hui STW. KTN Flushing Water Service Reservoir. FLN Flushing Water Service Reservoir.
11	Shek Wu Hui Sewage Treatment Works - Further Expansion (SWHSTW)	F1	Sewage treatment works with an installed capacity of more than 15,000 m3 per day.
13	Construction of new Sewage Pumping Stations (SPSs) in FLN NDA	F3	A sewage pumping station---(b) with an installed capacity of more than 2000 m3 per day and a boundary of which is less than 150 m from an existing or planned residential area or educational institution. 4no. SPS are included: SPS south of Fu Tei Au SPS off Man Kam To Road. SPS south of Wa Shan. SPS opposite Sacred Hill.
DP Package D			
8	Po Shek Wu Interchange Improvement (Major Improvement)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.
9	Fanling Bypass Western Section (New Road)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.
12	Reprovision of wholesale market in FLN NDA.	N3	A wholesale Market.

12.17 Schedule 2 Concurrent Projects

Chapter 2 of the EIA Report evaluates twelve potential concurrent projects, as shown in **Table 2.12**, with **Figures 2.21 and 2.22** illustrating their locations. The evaluation provided in **Chapter 2** concludes that five of these projects should be assessed for cumulative impacts, as listed below.

12.17.1 Agreement No. CE38/2010(CE) Planning Study on Liantang/Heung Yuen Wai Cross-boundary Control Point and its Associated Connecting Roads in Hong Kong – Feasibility Study.

A new Boundary Control Point (BCP) is proposed to be constructed at Liantang/Heung Yuen Wai together with its connecting roads and other associated works. The proposed BCP is located at the boundary with Shenzhen near the existing Chuk Yuen Village. The site will comprise of a main passenger building with passenger and cargo processing facilities and associated customs, transport and ancillary facilities. Connection to Shenzhen side will be via several bridges over the Shenzhen River. The BCP is linked with the Tolo/Fanling Highway – about 5.3km on viaduct or at-grade and 5.7km in tunnels.

The connecting road alignment consists of six main sections:

- Lin Ma Hang to Frontier Closed Area (FCA) Boundary – this section comprises at-grade sections and viaducts and includes the improvement works at Lin Ma Hang Road;
- Ping Yeung to Wo Keng Shan – this section stretches from the Frontier Closed Area Boundary to the tunnel portal at Cheung Shan and comprises at-grade sections and viaducts including an interchange at Ping Yeung;
- North Tunnel – this section comprises the tunnel segment at Cheung Shan and includes a ventilation building at the portals on either end of the tunnel;
- Sha Tau Kok Road – this section stretches from the tunnel portal at Wo Keng Shan to the tunnel portal south of Loi Tung and comprises at-grade sections and viaducts including an interchange at Sha Tau Kok and an administration building;
- South Tunnel – this section comprises a tunnel segment that stretches from Loi Tung to Fanling and includes a ventilation building at the portals on either end of the tunnel as well as a ventilation building in the middle of the tunnel near Lau Shui Heung;
- Fanling – this section comprises the at-grade, viaducts and interchange connection to the existing Fanling Highway.

This road will connect to the Tolo/Fanling Highway at the same point as DP10 Fanling Bypass Eastern Section and is within the visual setting of

the FLN Flushing Water Service Reservoir (DP7). Adverse landscape impacts may arise in relation to interference with hillside terrain and associated vegetation cover (shrubland and woodland) as a result of tunnel portal construction and road viaducts linking to the Fanling Highway from the mountainside of Lung Shan. In addition, agricultural lands, natural streams, lowland woodland and rural development areas at the base of the mountain would be affected by link road connections. Plantation trees lining the Fanling Highway would also be affected. These works are also likely to influence the 'Natural Hillside Landscape' and 'Rural and Urban Peripheral Village Landscape' character areas within the context.

Cumulative adverse impacts are predicted in relation to the loss of landscape resources and intrusion into Natural Hillside Landscape LCA as identified above. The increased road structure visible within the valley landscape is also likely to generate negative visual impacts.

12.17.2 Agreement No. CE53/2008(CE) Planning and Engineering Study on Development of Lok Ma Chau Loop - Investigation

The LMC Loop project is a joint study between Hong Kong and Shenzhen of an 87 ha site to the northwest of the KTN NDA, bounded by the new and old channel of the Shenzhen River. The focus of the LMC Loop Study is to develop the site for higher education, high tech research & development and the cultural and creative industries. The overall objective is to formulate a comprehensive development plan for the site with a view to creating a sustainable, environmentally friendly, energy efficient and people oriented community.

The LMC Loop Eastern Connection Road (ECR) connects to KTN NDA; where it links with the KTN NDA distributor road D1 to D5 south of Ma Tso Lung. The construction programmes of the projects are likely to be run concurrently and therefore the cumulative landscape and visual impact has been assessed for both construction and operational phases below, using the information available regarding the LMC Loop project. Note that the LMC Loop EIA has been formally submitted to EPD and at the time of writing is still under consideration and therefore not final.

In terms of landscape, LRs within the LMC Loop project area with relatively higher sensitivity include mixed woodland, fishponds, natural streams, natural rivers and marsh and the LCAs with relatively higher sensitivity are all lowland rural landscape in various locations. It is predicted that the LMC Loop project will only substantially affect marsh LR in the Loop area and this will be alleviated through appropriate mitigation including the establishment of an Ecological Area and creation of a new marshland area, such that overall the impact will not be significant. Neither the area of marsh affected nor the Ecological Areas fall within the NENT NDA, and no cumulative impact is predicted for this

LR. The LRs where the projects connect are principally shrubland and woodland with some lowland areas near the stream in that area being seasonally marsh/wetland. With the implementation of appropriate mitigation measures for each project, the cumulative LR impacts are considered to be acceptable. The key mitigation measure for this area will be the integration, as far as technically feasible, of the new roads with the existing lowland landscape, the preservation of trees and woodland given all technical considerations and roadside planting.

In addition both projects, prior to mitigation, have substantial impacts on less developed lowland rural LCAs and 'Rural and Urban Peripheral Village Landscape' LCA. Although cumulatively a greater area of this LCA type will be affected, both projects will implement relevant mitigation (such as protecting, preserving, transplanting and compensating for trees; compensating specifically for any areas of woodland unavoidably affected and greening roads) such that overall at year 10 of operation the impacts are acceptable. Since the projects do not overlap, it is considered that cumulative impacts on LCAs are acceptable with the implementation of mitigation measures.

In addition the LMC Loop project will change the visual amenity of the area due to the implementation of the proposed developments and the road connection networks. It is likely that only people at the LMC border control point and residents of Ha Wan Tsuen and LMC village would be significantly affected by the LMC Loop project and none of these VSRs have views to the Project so will not suffer any cumulative impact. In general the LMC Loop project is shielded from view from the Project, with the Western Ranges generally blocking lower level views between the two areas. Only VSRs to the south east of the LMC Loop project and north-west of KTN NDA will have views of both projects where the topography is flatter. These VSRs include residents of Shun Yee San Tsuen and Ma Tso Lung San Tsuen and the change in view they experience is likely to be slightly larger if considering both projects together. However, relevant mitigation measures such as the responsive design of road connecting the two projects (alignment responding to the lowland context of the area), landscaping measures such as screen planting, vertical greening and green roofs to soften the built and engineering structures as well as tree preservation and roadside planting will all help to alleviate the visual impacts to slight or insignificant levels and overall the cumulative visual impacts from these two projects are considered to be acceptable with mitigation.

These two projects do not overlap in area, but do connect via the ECR. Although no cumulative impacts are predicted with the implementation of relevant mitigation measures, it is advised that a coordinated approach be undertaken between these projects, to reduce potential impacts in terms of both magnitude and the period of disturbance during construction.

12.17.3 Widening of Tolo Highway/ Fanling Highway between Island House Interchange and Fanling (Stage 2).

This project will interface with DP1 Fanling Bypass Eastern section to the south east of Fanling in addition to the Liantang/Heung Yuen Wai Cross-boundary Control Point and its Associated Connecting Roads; the project involves:

- Widening of 3km of Fanling Highway between Tai Hang and Wo Hop Shek Interchange from dual three-lane to dual four-lane carriageway;
- Widening of the southbound slip road at Wo Hop Shek Interchange;
- Permanent closure of sections of the existing at-grade carriageways, footpaths and cycle tracks;
- Permanent closure and demolition of the existing footbridges at Kiu Tau and Ho Ka Yuen, the existing pedestrian and cycle bridge at Wo Hop Shek, the existing Kiu Tau Bridge, and sections of the existing footbridges at Tai Hang and Nam Wa Po;
- Ancillary works including drainage, geotechnical and landscaping works;
- Construction of water mains, noise barriers and retaining walls; and
- Installation of fire hydrants, traffic signals, and traffic control and surveillance system.

The tentative completion date of the project is from Yr 2015 to Yr 2018 but is still under review by the Highways Department.

The anticipated landscape and visual impacts from the highway widening project are expected to include loss of tree planting and landscape buffer, disturbance to existing settlement pattern, visual intrusion from the works in the construction phase and the structural features of road widening in the operation phase. Cumulative impacts will be expected if the construction activities of both projects coincide, as is currently anticipated. As the highway widening works follow the existing road network, no unacceptable cumulative impacts on the existing LRs and LCAs and visual cumulative impact will be anticipated with the implementation of mitigation measures such as tree preservation and transplanting, retention of vegetation etc. A further reduction of cumulative impacts would be achieved during operation as plants mature and soft landscape and visual mitigation measures take their effect over time.

12.17.4 Construction of cycle tracks and the associated supporting facilities from Sha Po Tsuen to Shek Sheung River.

This Project will interface with DP1 San Tin Highway and Fanling Highway Kwu Tung Section Widening and DP2 Castle Peak Road

Diversion as it passes to the south of the KTN NDA. The route follows the alignment Sheung Yue River which passes one of the sewage pumping stations which falls under DP5.

This project comprises the following primary works elements:

- Construction of a new cycle track (with footpath) linking up local cycle track networks in Yuen Long and Sheung Shui.
- Construction of the associated support facilities which includes 5 Resting Stations (formerly named “places of rest” in the EIA Study Brief) - R5, R6, R7, R8, and R9, and 1 Information Kiosk (formerly named “Education Centre” in the EIA Study Brief) integrated into R9. Also, one small seating area consisting of two benches at Mai Po Village.
- The associated streetscape, landscape, utilities diversions, traffic aids installation, street lighting, water, sewerage and drainage works;
- Provision of environmental mitigation measures.

This Project (the EIAO DP portion) is for the Priority Phase of the proposed Cycle Track Network recommended in the FS. According to the discussion with CEDD, the construction period is Yr 2014 – 2017. Cumulative landscape impacts may result from the loss of small areas of lowland woodland otherwise these impacts are likely to be minimal.

12.18 Landscape Impact Assessment Methodology

The methodology for the landscape assessment of schedule 2 DP Packages A, B, C and D follows that established for Schedule 3 projects as set out in Section 12.4.

12.18.1 Baseline Study

The assessment area has been defined in accordance with EIAO Guidance Note No. 8/2010. The area should normally include all areas within 500m from the work limit of DP.

Firstly a baseline study has been conducted for each schedule 2 DP, followed by an Impact Assessment, and each step is described below.

1. Identification of the baseline LR and LCAs found within the study area.

LRs and LCAs found within the 500 m Study Area have been identified and mapped by desktop study of topographical maps, information databases, photographs and site verification. LR types are mapped based on their principal physical landscape and visual characteristics which link them together, rather than their habitat function. For example active, abandoned, wet or dry agricultural land is considered as a single LR. In mapping these resources, contiguous areas of the LR types are identified which may not always match ecological habitat maps. LCAs are broader categorisations than LRs and each one encompasses a number of different LRs.

A broad-brush tree survey has been undertaken to identify species¹, mix proportions, dominant species as well as maturity and rarity of species (including those of conservation interest) within LR and LCAs in the Schedule 2 DPs study Areas.

2. Assessment of the sensitivity of the LR and LCAs

This is influenced by a number of factors including the following.

- Quality and maturity, condition and value of landscape resources/ character areas, taking into account information from the Broad Brush Tree Survey and general quality, maturity and condition of other types of vegetation (ranked as high, medium or low).
- Important/ rarity of landscape resources/ character areas. (Ranked as high, medium or low)
- Whether a landscape resource / character area is considered to be of local, regional, national or global importance (taken into account and included in the descriptive text where relevant).
- Whether there are any statutory or regulatory limitations/ requirements relating to the landscape resources/ character areas (taken into account and included in the descriptive text where relevant) .
- Ability of the landscape resources/ character areas to accommodate change without compromising their essential nature (ranked high, medium or low).

The sensitivity of each LR and LCA is based on the values of all the above factors in totality and classified as follows:

- High:** Important landscape or landscape resources of particularly distinctive character of high importance, sensitive to relatively small changes.
- Medium:** Landscape or landscape resources of moderately valued landscape characteristics reasonably to tolerant to change.
- Low:** Landscape or landscape resources of relatively unimportant landscape characteristics largely tolerant to change.

12.18.2 Landscape Impact Assessment

Landscape impacts have been assessed for the construction and operational phases of the DPs within the KTN and FLN NDA Study Areas as follows.

1. Identification of potential sources of landscape impact

There are various construction works elements and operational procedures that have the potential to generate landscape impacts.

¹ A plant is considered as a tree if its diameter at breast height (DBH) is 95mm or more (or girth [circumference of the trunk] measures 300 mm or more). 'Breast height' is standardised at a height of 1300 mm above ground level in Hong Kong according to ETWB TCW No. 3/2006 on Tree Preservation.

2. Identification of the magnitude of change as a result of landscape impacts

Rating of the magnitude of change caused by landscape impacts. The magnitude of change caused by the landscape impact is quantified as far as possible and depends on a number of factors including the following:

- The physical extent of the impact. This is assessed using a number of factors, including: absolute area/length within the various works areas; relative area/length with the site compared to the wider study area; and the current land use compared to the proposed land use i.e. taking into account some land, even though it is within the works area, will not be directly impacted e.g. land zoned as “Green Belt” will remain unchanged (ranked as small, medium or large)
- Compatibility of the Project and associated works with the existing and planned landscape in the vicinity (ranked as good, fair or poor)
- Duration of impacts i.e. whether it is temporary (short or medium term) or permanent, under construction and operational phases; and
- Reversibility of change (ranked as reversible or irreversible).

The magnitude of changes on each LR/LCA is based on the values of all the above factors in totality and classified as follows:

- Large:** The LRs or LCAs would suffer a major change.
- Intermediate:** The LRs or LCAs would suffer moderate change.
- Small:** The LRs or LCAs would suffer slight or barely perceptible change.
- Negligible:** The LRs or LCAs would suffer no discernible change.

3. Prediction of the significance of landscape impacts

Through the identification of the sensitivity of the various landscape resources and character areas, together with the magnitude of change impact, it is possible to categorise and make a reasoned prediction on the likely significance of the overall landscape impacts. **Table 12.18.1** shows the rationale for dividing the degree of significance into four thresholds. Where the magnitude of change is split, i.e. slight/moderate, a judgement will be made on whether the change is slight or moderate.

Table 12.18.1 - Relationship between receptor sensitivity and magnitude of change in defining impact significance.

		Receptor Sensitivity (of LR/LCA)		
		Low	Medium	High
Magnitude of Change	Negligible	Insignificant	Insignificant	Insignificant
	Small	Slight	Slight/ Moderate	Moderate
	Intermediate	Slight/Moderate	Moderate	Moderate/ Substantial
	Large	Moderate	Moderate/ Substantial	Substantial

The four thresholds for the degree of significance are explained below. All impacts are assumed to be adverse in the text of the Report, unless specifically identified otherwise.

- Substantial:** Adverse / beneficial impact where the proposed NDA Project will cause significant deterioration or improvement in existing landscape quality
- Moderate:** Adverse / beneficial impact where the proposed NDA Project will cause a noticeable deterioration or improvement in existing landscape quality
- Slight:** Adverse / beneficial impact where the proposed NDA Project will cause barely perceptible deterioration or improvement in existing landscape quality
- Insignificant:** No discernible change in the existing landscape quality

4. Identification of potential landscape mitigation measures

Potential landscape mitigation measures have been identified with a view to reduce landscape impacts to acceptable levels during design, construction and operation of the Project and associated works. The proposed mitigation measures are not only concerned with damage reduction but will also include consideration of preservation to avoid disturbance to LRs and LCAs and potential enhancement of existing landscape (and visual) quality. Mitigation measures may take the form of:

- Adopting alternative design or revising the basic engineering and / or architectural design, to prevent and / or minimize adverse impacts. Alternative alignment(s), design(s) and construction methods that avoid or reduce the identified landscape impacts have been evaluated for comparison before adopting other mitigation or compensatory measures to alleviate the impacts.
- Remedial measures such as colour and textural treatment of physical, engineering and building features and green roofing; and
- Compensatory measures such as the implementation of landscape design measures (e.g. tree planting, creation of new open space etc.) to compensate for unavoidable adverse impacts and to attempt to generate potentially beneficial long-term impacts.

To ensure their effectiveness throughout the construction and operational phases, the relevant responsible parties for the on-going management and maintenance of the proposed mitigation measures have been identified. Approval-in-principle to the funding, implementation,

management and maintenance of the proposed mitigation measures is being sought from the appropriate authorities, according to the principles in *ETWB TCW No. 2/2004*.

1. Residual landscape impacts after implementation of mitigation

Where mitigation cannot fully address the impact of the development, residual impact are identified and discussed in terms of their significance.

2. Prediction on the acceptability of impacts

An overall assessment of the acceptability, or otherwise, of the impacts is stated, according to the five criteria set out in Annex 10 of the EIAO-TM namely beneficial, acceptable, acceptable with mitigation measures, unacceptable and undetermined.

12.19 Visual Impact Assessment Methodology

Visual impacts have been assessed for the construction and operational phases of the schedule 2 DPs with methodology highlighted as follows:

1. Identification and plotting of the visual envelope (VE).

The assessment area for the visual impact assessment is defined by the Visual Envelope (VE) which includes all the points from which the scheme proposals may be visible, comprising the view shed formed by natural / manmade features such as ridgelines, built form or areas of woodland / large trees. This area is identified using a combination of detailed site walkover surveys, desktop study and review of aerial photography.

2. Identification of Visual Sensitive Receivers (VSRs) within the Visual Envelope.

Visual Sensitive Receivers (VSRs) are people who would reside, play, work or travel within the Visual Envelope of the Project. In addition, Vantage Points (VPs) at various VSRs are selected as indicative of the range of views within the Visual Envelope, from which photomontages can be generated to help assess visual impacts.

1. Assessment of the sensitivity of the VSRs.

The assessment of sensitivity is based on the quality and extent of the existing view. The factors affecting the sensitivity of receivers for evaluation of visual impacts include the following:

- Value and quality of existing views;
- Availability and amenity of alternative views;
- Type and estimated number of receiver population;
- Duration or frequency of view; and
- Degree of visibility.

Assessment of the relative numbers of VSRs expressed in terms of whether there are very few, few, many or very many VSRs in any one category of VSR.

For the purposes of this assessment, the sensitivity of different VSRs receptors can be broadly categorised as shown below:

High Sensitivity	The VSR is highly sensitive to any changes in the viewing experience - Residential properties where the principle view is of the development site, formalised public viewpoints or designed landscape vistas.
Medium Sensitivity	The VSR is moderately sensitive to any changes to the viewing experience - Outdoor workers, office workers, recreational users, residential properties where the secondary view is of the development.
Low Sensitivity	The VSR is slightly sensitive to any changes in the viewing experience - People travelling through the landscape (by car, bus).

3. Identification of potential sources of visual impact.

Identification of potential sources of visual impacts. These are the various elements of the construction works and operational procedures that could generate visual impacts.

Ranking of the magnitude of visual change, which is quantified as far as possible and depends on a number of factors including the following.

- Distance between the closest source of impact and the VSR (in meters).
- Scale of the development. This is assessed using a number of factors, including: absolute dimensions of new built structures visible to the VSR; relative dimensions of the new built structures compared to other structures visible to the VSRs in their existing view (ranked as small, medium or large).
- Potential blockage of view (ranked as full, partial or nil).
- Duration of the impacts (ranked as temporary [short/medium term] or permanent).
- Compatibility of the Project and associated works with the existing and planned landscape in the vicinity. (Ranked as good, fair or poor)
- Reversibility of change (ranked as reversible or irreversible).

4. Assessment of the potential magnitude of visual impacts

The magnitude of change caused by visual impacts on each VSR, based on the values of all the above factors in totality and classified as follows:

- Large:** The VSRs would suffer a major change in their viewing.
- Intermediate:** The VSRs would suffer a moderate in their viewing experience.
The VSRs would suffer a small change in their viewing experience.
- Negligible:** The VSRs would suffer no discernible change in their viewing experience.

5. Identification of potential visual mitigation measures,

Potential visual mitigation measures designed to reduce the significance of visual impacts to acceptable levels during design, construction and operation of the Project and its associated works, have been considered. The mitigation measures proposed are not only concerned with damage reduction but will also include consideration of potential enhancement of existing visual (and landscape) quality. Mitigation measure may take the form of

- Adopting alternative designs or revising the basic engineering and / or architectural design, to prevent and / or minimize adverse impacts. Alternative alignment(s), design(s) and construction methods that avoid or reduce the identified landscape impacts have been evaluated for comparison before adopting other mitigation or compensatory measures to alleviate the impacts.
- Remedial measures such as colour and textural treatment of physical, engineering and building features; and
- Compensatory measures such as the implementation of landscape works (e.g. tree planting, creation of new open space etc.) to compensate for unavoidable adverse impacts and to attempt to generate potentially beneficial long-term impacts.
- To ensure their effectiveness throughout the construction and operational phases of the Project and associated works, the relevant responsible parties for the on-going management and maintenance of the proposed mitigation measures have been provisionally identified. Approval-in-principle to the initial capital funding, implementation, management and maintenance of the proposed mitigation measures is being sought from the appropriate authorities, according to the principles in ETWB TCW No. 2/2004.

6. Prediction of visual impact significance before and after the implementation of the mitigation measures.

Through the identification of the sensitivity of the various VSR, their number and magnitude of visual change encountered, it is possible to make a reasoned prediction on the likely significance of the overall visual impact. **Table 12.19.1** presents the rationale for dividing the degree of significance. Where the magnitude of change is split, i.e. slight/moderate, a judgement will be made on whether the change is slight or moderate.

Table 12.19.1 - Relationship between receptor sensitivity and magnitude of change in defining impact significance

		Receptor Sensitivity (of VSR)		
		Low	Medium	High
Magnitude of change	Negligible	Insignificant	Insignificant	Insignificant
	Small	Slight	Slight/ Moderate	Moderate
	Intermediate	Slight/Moderate	Moderate	Moderate/ Substantial
	Large	Moderate	Moderate/ Substantial	Substantial

The four thresholds for the degree of significance are explained below. All impacts are assumed to be adverse in the text of the report, unless specifically identified otherwise.

- Substantial:** Adverse / beneficial impact where the proposed Project will cause significant deterioration or improvement in existing visual quality
- Moderate:** Adverse / beneficial impact where the proposed Project will cause a noticeable deterioration or improvement in existing landscape quality
- Slight:** Adverse / beneficial impact where the proposed Project will cause a barely perceptible deterioration or improvement in existing landscape quality
- Insignificant:** The impact will cause no discernible change in the existing landscape quality

In order to illustrate the effectiveness of the proposed visual mitigation measures, photomontages from selected Vantage Points (VPs) looking towards the relevant NDA and the DPs have been prepared to illustrate:

- Existing conditions;
- Day 1 of Operation Phase without Mitigation Measures;
- Day 1 of Operation Phase with Mitigation Measures; and
- Year 10 of Operation Phase with Mitigation Measures.

The development appearance as shown in the operational phases provides an indicative view of how structures may appear within the landscape setting in the future.

The selection of VSRs/VPs for preparation of photomontages has taken into account the following criteria:

- A selection of long, medium and short distance views to provide a perspective on the varying scales and extent of the proposed developments within the existing landscape setting.
- A selection of elevated and ground level views to demonstrate the visual impact of structures and provide comparison between pedestrian and high-rise residential visual experience.
- Views on the periphery of the proposed NDA development where schedule 2 DPs will not be concealed by the new urban form and remain visible.
- Points which provide a representative view from particularly sensitive VSR groups such as residential developments where recording and presenting every possible view would not be practical.

7. Prediction of acceptability of impacts

An overall assessment of the acceptability, or otherwise, of the impacts in accordance with the five criteria set out in Annex 10 of the EIAO-TM, namely:

- Beneficial - if the project will complement the landscape and visual character of its setting, will follow the relevant planning objectives and will improve overall and visual quality;
- Acceptable if the assessment indicates that there will be no significant effects on the landscape, no significant visual effects caused by the appearance of the project, or no interference with key views;
- Acceptable with mitigation measures if there will be some adverse effects, but these can be eliminated, reduced or offset to a large extent by specific measures;
- Unacceptable if the adverse effects are considered too excessive and are unable to mitigate practically;
- Undetermined if significant adverse effects are likely, but the extent to which they may occur or may be mitigated cannot be determined from the study. Further detailed study will be required for the specific effects in question.

12A.1 KTN Schedule 2 DP 1, 2, 3 and 4 (Package A)

The following section presents the assessment of DPs 1, 2, 3 and 4 only; see **Table 12.16.2** for details of how each package has been divided.

The components of DP Package A are summarised in **Table 12A1.1** below.

Table 12A.1.1 - Schedule 2 DP Package A

DP Package A			
1	San Tin Highway and Fanling Highway Kwu Tung Section Widening (between San Tin Interchange)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.
2	Castle Peak Road Diversion (Major Improvement)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.
3	KTN NDA Road P1 and P2 (New Road) and associated new Kwu Tung Interchange (New Road) and Pak Shek Au Interchange Improvement (Major Improvement)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.
4	KTN NDA Road D1 to D5 (New Road)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.

12A.2 Review of Planning and Development Control Framework

This section provides an overview of the HKSAR Government's development intentions, statutory land-use and planning within the Study Areas, specifically from landscape and visual standpoints. It considers relevant, published studies, such as HK2030 Study, OZPs, and DPA Plans. This information has been considered in relation to the relevant revised RODP of the NDAs and their Layout Plans with the aim of assessing whether the DP can fit into the surrounding setting.

During public consultations people were noted to be specifically concerned about the landscape and visual impacts of noise barrier construction; some people also suggest maximising the greening opportunities. The planning proposal for the NDAs which includes the Schedule 2 DPs therefore aims to minimise the area requiring noise barriers and maximise the greening opportunities to reduce potential landscape and visual impacts.

12A2.1 Design measures adopted within the Schedule 2 Designated Projects

The Schedule 2 DPs form the key infrastructure developments to support the future development and population growth within the KTN and FLN NDAs. KTN and FLN NDAs will provide a mix of housing types as well as basic infrastructure and community facilities. The development opportunities and constraints of the Schedule 2 DPs are presented in **Section 2.4.1**, these have informed the development and consideration of alternative infrastructure options. A summary of the key design rationale for each project is provided below:

DP1 - San Tin Highway / Fanling Highway Kwu Tung Section Widening (between San Tin Interchange and Po Shek Wu Interchange) (Major Improvement) and DP2 Castle Peak Road Diversion

The existing San Tin Highway/ Fanling Highway between San Tin Interchange is anticipated to reach its design capacity by 2029. In order to sustain the future traffic growth from the development in Northern New Territories, it is proposed to widen the concerned portion from dual 3-lane to dual 4-lane configuration. The alterations to the highway will impact on the alignment of Castle Peak Road which runs parallel to the highway and will require realignment works.

The total length of the route affected is just over 4km and includes five pedestrian over bridges, construction of noise barriers almost along the entire route including two fully enclosed noise barriers. The location and type of noise barriers are shown on **Figure 12.51.5 to 10**.

As a result of existing underground services, historic buildings, land uses (existing and planned) and protected trees (5no. Old and Valuable Trees) the alignment of the road has been adjusted to minimise conflict with these existing constraints. The preferred design option maintains the five OVTs in their current locations by shifting the Tai Po direction carriageway further north so that the trees are kept within the future soft landscape median. The original dual 3-lane width will become the Yuen Long bound dual 4-lane carriageway and the other 4 lanes shifted to the north side of the trees. The widened Fanling Highway will push north in the adjacent rural development areas. The widened central median creates a substantial area for soft landscaping to assist with the integration of the widened highway, whilst securing the protection of the OVTs.

The expressway will also be very close to the old village houses at Yin Liu. This arrangement will create a very wide central reserve along this section (maximum 27m wide and about 20,500 m² in area) and vast area of developable land (more than 1.5km long) in KTN NDA is taken off.

The diverted Castle Peak Road has also been aligned specifically to avoid encroachment to the graded historic buildings of Enchi Lodge and the Earth God Shrine.

DP3 - KTN NDA Road P1 and P2 (New Road) and associated new Kwu Tung Interchange (New Road) and Pak Shek Au Interchange Improvement (Major Improvement)

DP comprises two primary distributor roads (P1 and P2) which form interchange connections with the Fanling Highway to the east and west of KTN NDA. The approximate length of each section is: Road P1 – 880m and P2 1050m (total 1.93km). The works including four roundabouts, noise barriers, enclosed and semi-enclosed noise barriers, one pedestrian footbridge and one vehicle bridge crossing the Sheung Yue River. Noise structures are detailed on **Figures 12.51.5 to 10.**

The western primary distributor road (Road P1) will branch off from the supplementary interchange near Pak Shek Au. The alignment has been carefully selected to maximise the efficient use of land for housing development to the east, respect burial grounds to the west and avoid the existing Dongjiang water mains. In this case alternative feasible options were not available and a single option is proposed.

The interchange section with the Fanling Highway is intended to provide better accessibility to the NDA and anticipates the future development in LMC Loop. The interchange configuration has been designed to minimise land requirement so that the requirement and extent of engineered structures can be reduced. In addition the design allows the retention of the San Tin Roundabout to assist in reducing the overall disruption during construction.

The eastern dual 2-lane elevated primary distributor road (Road P2) branches off from the proposed Kwu Tung Interchange near Yin Kong, crossing Sheung Yue River and joins another proposed at-grade roundabout, which will become a major junction with the internal roads south of the Kwu Tung Station. This design of this section is principally governed by sensitive air and noise receivers and to further ease pedestrian crossing the road by a link bridge. The alignment has been carefully selected to maximise the land area for housing development, taking into account the wider development constraints.

The interchange section of this road is proposed as the major access from the Fanling Highway to KTN NDA. Along the Fanling Highway section to the south of the NDA, there are many constraints to a new interchange or highway improvement works. Immediately south of the Fanling Highway and on the west side of Sheung Yue River, there are existing residential buildings (Europa Garden Phase 1 and Phase 2). Due to the limited space, it is not feasible to place the interchange along the section next to the development. The Long Valley ecologically sensitive area is located to the east of Sheung Yue River; given this sensitivity no road will pass through or in close proximity of Long Valley. Therefore it is proposed to locate the major interchange at about 400m east of Sheung Yue River, avoiding the Long Valley. It will be an elevated roundabout with slip roads connecting Fanling Highway in all direction movements. It is close to but does not affect the planned CDA zones on the two sides of the expressway. Buildings including the St. Paul's House of Prayer on the

both sides of this expressway section will not be affected. It is also at around 200m away from Yin Kong.

DP 4 - KTN NDA Road D1 to D5 (New Road)

The works involve just over 4km of new road infrastructure including one roundabout with pedestrian underpass, noise barriers, semi-enclosed and enclosed noise barriers. Noise structures are detailed on Figures **12.51.5 to 10**. Five road sections form the DP; the approximate lengths of each section are: Road D1 – 525m, D2 – 810m, D3 – 925m, D4 - 895m and D5 – 850m.

The distributor roads (Road D1 and D2) will provide direct connectivity between the diverted Castle Peak Road and KTN NDA. The alignment has been developed in parallel to the revised RODP design and considers maximising the efficient use of the land area for housing development. The northern distributor road (Road D3) will provide the east-west connectivity between the two primary distributor roads (P1 and P2). Further north to the western primary distributor road, another district distributor road (Road D4) will gradually go downhill and passes under a 400kV power Over-head (Transmission) Lines (OHL). Further north to the eastern primary distributor road, a district distributor road (Road D5) will gradually goes uphill and passes under a 400kV power OHL. The road generally follows the existing level. Then it turns to the west and goes round the northern side of Fung Kong Shan, forming another junction near the Lo Wu Firing Range. This junction connects with the possible road to the future developments in LMC Loop, and also acts as an entry point to KTN NDA from the north.

12A2.2 Existing Outline Zoning Plans (OZPs)

The review of the OZPs has included a study of the map information as well as the accompanying Notes and Explanatory Statements. The DP sites and study areas have been superimposed onto existing OZPs and DPA Plans to determine the potential influence on the existing zoning. The study areas and site boundaries for DPs 1, 2, 3, and 4 have been combined on **Figure 12.50.1**.

The KTN DPs 1, 2, 3 and 4 study areas are covered by the following OZP/DPA documents:

- Approved Kwu Tung North OZP No. S/NE-KTN/8.
- Approved Ma Tso Lung and Hoo Hok Wai Development Permission Area Plan No. DPA/NE-MTL/2.
- Approved Ngau Tam Mei OZP No. S/YL-NTM/12.
- Draft Kwu Tung South OZP No. S/NE-KTS/13.

Table 12A.2.1 summarises the areas of existing zoning types which will be directly affected by the site boundary of each DP.

Table 12A.2.1- Schedule 2 Designated Projects 1, 2, 3 and 4

Zoning Type	OZP/DPA number and extent of zoning within the site boundary that will undergo change (ha).	Comments on Major land use changes
DP1 - San Tin Highway and Fanling Highway Kwu Tung Section Widening (between San Tin Interchange)		
Agriculture (AGR)	S/NE-KTN/8 0.8	Approximately 0.8ha of this zoning type will be modified to the west of Ying Kong on the north side of the Fanling Highway.
Industrial (I)	S/NE-KTN/8 0.8	Approximately 0.8ha of this zoning will be modified to the east of the Home of Loving Faithfulness as it meets the Fanling Highway.
Green Belt (GB)	S/FSS/17 0.7	Approximately 0.7ha of this zoning will be modified on the southern periphery of Hak Ka Wai as it meets the Fanling Highway.
DP2 – Castle Peak Road Diversion		
Agriculture (AGR)	S/NE-KTN/8 1.9	Approximately 1.9ha of this zoning type will be modified to the south of Pak Shek Au.
Industrial (I)	S/NE-KTN/8 0.72	Approximately 0.72ha of this zoning will be modified to the south of Tong Kok.
Green Belt (GB)	S/NE-KTN/8 1.9	Approximately 1.9ha of this zoning will be modified to the west of Pak Shek Au as it meets the Fanling Highway.
Comprehensive Development Area (CDA)	S/NE-KTN/8 0.45	Approximately 0.45ha of this zoning will be modified to the east of Pak Shek Au.
Government / Institution / Community (GIC)	S/NE-KTN/8 0.06	Approximately 0.06ha of this zoning will be modified to the south of the Home of the Loving Faithfulness (Dills Corner), east of Ho Sheung Heung Road.
DP3 – KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement		
Agriculture (AGR)	S/NE-KTN/8 2.4ha	Approximately 2.4ha of this zoning type will be modified within Pak Shek Au and east of Tong Kok.
Industrial (I)	S/NE-KTN/8 0.3	Approximately 0.3ha of this zoning type will be modified to the west of Yin Kong.
Green Belt (GB)	S/NE-KTN/8 1.4	Approximately 1.4ha of this zoning type will be modified within Pak Shek Au and to the south of Ma Tso Lung landfill.
Comprehensive Development Area (CDA)	S/NE-KTN/8 0.8	Approximately 0.8ha of this zoning type will be modified to the east of Tong Kok.
Open Space (O)	S/NE-KTN/8 0.87	Approximately 0.87ha of this zoning type will be modified to the north of Pak Shek Au.
Open Storage (OS)	S/NE-KTN/8 0.9	Approximately 0.9ha of this zoning type will be modified between Fung Kong Shan and Tong Kok.

Zoning Type	OZP/DPA number and extent of zoning within the site boundary that will undergo change (ha).	Comments on Major land use changes
DP4 – KTN NDA Road D1 to D5		
Agriculture (AGR)	S/NE-KTN/8 1.7	Approximately 1.7ha of this zoning type will be modified, concentrated around Fung Kong Shan and Tung Fong.
Industrial (I)	S/NE-KTN/8 0.5	Approximately 0.5ha of this zoning type will be modified to the south of Tong Kok and to the west of Tung Fong.
Green Belt (GB)	S/NE-KTN/8 1.2	Approximately 1.2ha of this zoning type will be modified, the majority of which is focused around Fong Kong Shan.
Open Storage (OS)	S/NE-KTN/8 3.8	Approximately 3.8 of this zoning type will be modified between Fung Kong Shan and Tong Kok.
Comprehensive Development Area (CDA)	S/NE-KTN/8 0.7	Approximately 0.7ha of this zoning type will be modified to the east of Pak Shek Au and east of Tong Kok.
Government / Institution / Community (GIC)	S/NE-KTN/8 0.3	Approximately 0.3ha of this zoning type associated the Community Sports area west of Tung Fong and a small area of land at the Home of the Loving Faithfulness (Dills Corner), east of Ho Sheung Heung Road.

12A2.3 Summary of land use changes

In summary, the DPs would modify a diversity of land uses throughout their alignment. As a result of their linear nature these traverse numerous planning zones; whilst the overall area affected may not be large the alignment has potential to isolate small areas of the various land uses making them less viable.

In the case of land uses which have already been developed and would normally incorporate road functions such as Industrial, Open Storage and Other Specified Uses; it is considered that this change would be broadly compatible.

The principal conflicts are in relation to the loss of land zoned as Green Belt, Agriculture and Open Space where the impact of the construction works are considered to be largely irreversible. All four DPs pass through these land use types to varying degrees, most of which are relatively small.

The works area for DP3 and DP4 would generate the majority of these conflicts as it passes through Pak Shek Au, Tong Kok and, Tung Fong and Fung Kong Shan areas. The total loss of agricultural zoned land would amount to approximately 4.9ha and 2ha of Green Belt land.

12A.3 Landscape Baseline Conditions

According to the Study Brief (ESB-176/2008) baseline review comprises the identification of all existing LR and LCA within 500m of the DP boundaries.

The overall Study Area for all the DPs is generally natural and rural. Complex LRs can be classified into different major categories, as follows:

- LR1 – Channelised Water Course
- LR2 – Water Course
- LR3 – Water Pond
- LR4 – Marsh/ Wetland
- LR5 – Plantation
- LR6 – Hillside Woodland
- LR7 – Lowland Woodland
- LR8 – Shrubland/ Grassland Mosaic
- LR9 – Agricultural Land
- LR10 – Open Space/ Recreational Area
- LR11 – Urban Development Area
- LR12 – Rural Development Area
- LR13 – Industrial/ Open Storage
- LR14 – Major Transportation Corridor

The LCAs in the study area are classified into major categories as follows:

- LCA1 Natural Hillside Landscape
- LCA2 Rural and Urban Peripheral Village Landscape
- LCA3 Urban Development Landscape
- LCA4 Industrial Landscape
- LCA5 Lowland Agricultural Landscape
- LCA6 Major Transportation Corridor Landscape
- LCA7 Major Water Course Corridor Landscape

The landscape resources and landscape character areas of each NDA are described in further detail below, together with their sensitivity.

12A3.1 Broad Brush Tree Survey

A broad brush tree survey has been carried out within the study area which estimates that around 500 trees will be affected by the proposed development. Major tree species included *Acacia confusa*, *Acacia auriculiformis*, *Araucaria heterophylla*, *Bauhinia blakeana*, *Bombax ceiba*, *Cassia siamea*, *Celtis sinensis*, *Cinnamomum camphora*, *Clausena lansium*, *Citrus maxima*, *Dimocarpus longan*, *Eucalyptus camaldulensis*, *Ficus virens*, *Ficus microcarpa*, *Litchi chinensis*, *Leucaena leucocephala*, *Macaranga tanarius*, *Mangifera indica*, and *Melaleuca quinquenervia*. Many trees are found in the foothills of the natural upland, as well as the rural fringe in between different villages and they are generally mature.

A detailed Tree Felling Application process will be carried out at a later detailed design stage, to finalise tree treatment and allocate

compensatory planting areas including available open space, parks and streetscape.

There are five Old and Valuable Trees (OVTs) found in the Study Area, all in KTN (ref. No. LCSD/ N45, LCSD/ N47, LCSD/ N49, LCSD/ N50, LCSD/ N51) and their locations are illustrated in **Figure 12.51.9**.

12A3.2 DP Package A Baseline Landscape Resources and Landscape Character Areas

The baseline LRs and LCAs of KTN DPs 1, 2, 3 and 4 are detailed along with their sensitivity in **Table 12A.3.1 and 12A.3.2**; figures presenting this information are set out below:

- **Figure 12.51.1** presents LRs.
- **Figures 12.51.5 to 11** presents LRs enlarged plan versions.
- **Figures 12.51.30 to 41** for representative images of LRs.
- **Figure 12.52.1** presents LCAs.
- **Figures 12.52.5 to 6** for representative images of LCAs.

Table 12A.3.1 - Landscape Resources and their Sensitivity- KTN NDA (DP1, 2, 3 and 4)					
Id. No.	Landscape Resource (LR)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
KLR 1 – Channelised Water Course					
Refers to modified water courses channelised with concrete or grasscrete, or with gabion-fortified banks, or water courses undergoing such channelisation. This LR includes both large channelised river water courses as well as some much smaller concrete lined water courses associated with agricultural land. This LR also includes some walkways along the larger water course and the vegetation associated with the water course, both within the channel and along the banks as well as the ridge of the banks. The vegetation mainly consists of grasses and shrubs, but also includes trees in some areas as detailed further in the individual LR descriptions.					
Within the Study Area of KTN NDA (DP1, 2, 3 and 4) this LR includes sections of Shek Sheung River, Sheung Yue River, San Tin Eastern Main Drainage Channel and main channel along Castle Peak Road and Lok Ma Chau Road. This LR is one of the prominent features within the landscape.					
1.2	Shek Sheung River	Medium	Medium	Medium	Medium
Shek Sheung River collects water from the south and flows north, joining Sheung Yue River west of Sheung Shui Slaughter House. There is also a branch that splits from Ng Tung River and flows round the Shek Wu Hui Sewage Treatment Works to the south but this is mainly dry and a flood protection measure. This LR is mainly a grasscrete lined, trapezoidal channel, formed for the purpose of flood protection in Kwu Tung and Fanling areas. Water partially dries out during the dry season and there are small water channels at the base of the channel when water flow is low, with grass on either side.					
A small section of this river flows through the eastern corner of Long Valley, where it is a narrow channel. There are grasses and shrubs along the river’s embankment, as well as trees planted along both sides in many sections of the river. The dominant tree species are exotic, including <i>Acacia auriculiformis</i> , <i>Acacia confusa</i> and <i>Leucaena leucocephala</i> . Native trees of lower abundance can also be found, e.g. <i>Celtis sinensis</i> , <i>Cinnamomum camphora</i> , <i>Cleistocalyx operculatus</i> and <i>Sapium sebiferum</i> .					
Overall this river has medium amenity value and is reasonably capable of accommodating change. Its sensitivity is therefore considered to be medium .					
1.3	Sheung Yue River	Medium	Medium	Medium	Medium
Sheung Yue River runs across Long Valley from southwest to northeast where it joins Shek Sheung River before flowing into Ng Tung River. This river drains water in Ho Sheung Heung and Shek Tsai Leng to the west and Yin Kong and Tsung Pak Long to the east. Its banks are fortified with a rigid lining of stone masonry among which grasses grow sparsely between the stone blocks. At ground level, planted trees are found along both sides of the river. Most of the dominant trees are exotic, including species such as <i>Acacia auriculiformis</i> , <i>Acacia confusa</i> and <i>Leucaena leucocephala</i> . Other trees include the native species <i>Cordia dichotoma</i> , <i>Ficus virens</i> and <i>Macaranga tanarius</i> .					
This river is reasonably capable of accommodating change and its sensitivity is considered to be medium .					
1.4	Water Course Network in Long Valley	Medium	Low	High	Medium
This LR describes a network of waterways in the Long Valley area which eventually connect and flow into a box culvert near the Kwu Tung Road junction with Castle Peak Road. The watercourses are mainly vertically-sided concrete channels constructed for irrigation purposes with limited vegetation. The riparian vegetation that does exist comprises common and widespread herb species.					
This LR has a reasonable ability to accommodate change, being a man-made network of water channels, but overall it is vital to the Long Valley agricultural area for irrigation and its sensitivity is considered to be medium .					
1.5	San Tin Eastern MDC	Medium	Medium	Medium	Medium
This LR sits outside the works area and will not be affected.					
San Tin Eastern Main Drainage Channel runs along the west side of San Sham Road form Castle Peak Road to Shenzhen River. It drains water in the low-lying areas at the east of San Tin and Ki Lun Tsuen to the north. The channel is grasscrete banked and trapezoidal in section for the purpose of flood protection. Water partially dries out during the dry season and there is small water channel at the base of the main channel when water flow is low, with grass on either side. Plantation trees scattered along the upper banks include <i>Acacia confuse</i> and <i>Celtis sinensis</i> .					
This river is reasonably capable of accommodating change and its sensitivity is considered to be medium .					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
KLR 2 – Water Course					
Refers to natural or semi-natural water courses, including short sections with concreted banks. This LR also includes vegetation associated with the water course, both within the streams and along the banks as well as in the immediate vicinity. The vegetation mainly consists of grasses and shrubs, but also includes trees in some areas such as the upland streams, as detailed further in the individual LR descriptions. The vegetation often provides a subtle transition between this LR and its surrounding LR(s).					
Within the Study Area this LR includes watercourses running between different rural areas and villages, incorporating streams running off Ki Lun Shan, near Fung Kong, Shek Tsai Leng, Chau Tau, Pak Shek Au, Ngau Tei and around Kwu Tung itself.					
2.1	Natural Streams in Kwu Tung	Medium	Medium	Medium	Medium
These streams, connecting with the Sheung Yue River, are located centrally within the Study Area. They pass through villages including Fung Kong, Tung Fong, Tong Kok, Shek Tsai Leng and south of Ho Sheung Heung. The upstream section is natural but has been degraded by pollution, with seasonal flows and heavily vegetated stream banks, overgrown with common grass species such as <i>Bidens alba</i> and <i>Pennisetum</i> spp. Other sections of these streams are fortified by concrete banks with grey water flowing.					
This LR is relatively intolerant to change and its sensitivity is considered to be medium .					
2.3	Natural Streams at Ki Lun Shan	Medium	Medium	Low	High
This LR sits outside the works area and will not be affected.					
These natural streams run off Ki Lun Shan and flow down to the lowland area in the south of KTN NDA Study Area. One of the streams passes through Valais. They are not perennial streams and flow decreases and ceases during the dry season. Common grasses such as <i>Alocasia odora</i> , <i>Wedelia trilobata</i> and <i>Panicum maximum</i> grow abundantly along the banks.					
This LR is relatively intolerant to change and its sensitivity is considered to be high .					
2.4	Natural Streams at Ma Tso Lung	High	Medium	Low	High
This LR sits outside the works area and will not be affected.					
This LR describes natural streams running off Ma Tso Lung to the lowland area in Ma Tso Lung San Tsuen in the northwest of KTN NDA Study Area. Riparian plants included fruit trees (i.e. <i>Dimocarpus longan</i> and <i>Litchi chinensis</i>) and native understory species (e.g. <i>Lophatherm gracile</i> and <i>Alocasia odora</i>) and the riparian vegetation is dominated by the exotic climber species <i>Mikania micrantha</i> and herb species <i>Bidens alba</i> and <i>Alocasia macrorrhizos</i> . The section at Ma Tso Lung is regarded as ecologically important due to its naturalness and well developed bank area.					
This LR is relatively intolerant to change and its sensitivity is considered to be high .					
KLR 3 – Water Pond					
Refers to freshwater ponds. The ponds are often associated with agricultural land and used for irrigation, and punctuate the traditional field pattern. Some ponds are also found near residential or developed areas and have aesthetic, landscape value and some are fish ponds. This LR also includes vegetation associated with the ponds, both within and around the banks as well as in the immediate vicinity. The vegetation mainly consists of grasses and shrubs, with scattered trees.					
The main locations of these water ponds within the Study Area of DP1, 2, 3 and 4 include both foothill and lowland areas and are most concentrated in Ho Sheung Heung, Long Valley and Chau Tau.					
3.1	Ho Sheung Heung Water Ponds	Medium	Medium	Low	High
This LR is located within Ho Sheung Heung agricultural land and forms part of a relatively large continuous area of water ponds although most of these sit outside the Study Area. These ponds retain water most of the time including both the dry and wet seasons. The bunds of these ponds are vegetated by grasses and low shrubs, as well as some fruit trees such as <i>Musa x paradisiaca</i> , <i>Litchi chinensis</i> , <i>Mangifera indica</i> , <i>Dimocarpus longan</i> and <i>Citrus maxima</i> .					
The ponds in this area are of medium quality with common fruit trees and are relatively intolerant to change. The sensitivity of this LR is considered to be high .					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
3.2	Long Valley Water Pond	Medium	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR is located within Long Valley agricultural land. Water in the pond is usually full in the wet season and periodically pumped out by local farmers during the dry season for management purposes and irrigation. Grasses grow along their banks and provide a subtle transition between this LR and its surrounding agricultural land.</p> <p>Overall these ponds are relatively intolerant to change and their sensitivity is high.</p>					
3.3	Fung Kong Shan Water Ponds	Low	Medium	Low	Medium
<p>The ponds of this LR are located at the foot of Fung Kong Shan, to the west and east of Ma Tso Lung Road. They are isolated water ponds and store rainwater in both the wet and dry seasons but appear to be mainly abandoned. Dense grasses and shrubs grow in their immediate vicinity, as well as the Palm species <i>Roystonea regia</i> and some fruit trees such as <i>Litchi chinensis</i> and <i>Dimocarpus longan</i>.</p> <p>The quality and significance of this LR is relatively low, but it is relatively intolerant to change. Its sensitivity is therefore considered as medium.</p>					
3.5	Water Ponds beside Kam Hang Road	Medium	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>The ponds of this LR are located along Kam Hang Road and surrounded by villages and some agricultural land. They generally share a similar appearance and condition to the Long Valley water ponds (KLR-3.2) and water is sometimes pumped out during the dry season. The bunds and some areas with shallow water are vegetated by grasses and low shrubs.</p> <p>Overall these ponds have medium amenity value and are relatively intolerant to change. This LR's sensitivity is considered to be high.</p>					
3.6	Water Ponds at Pak Shek Au	Low	Medium	Low	Medium
<p>These are relatively small and isolated ponds at Pak Shek Au just north of the Fanling Highway in a small area of agricultural land now largely bordered by industrial land or open storage use. The ponds were most likely used for irrigation purposes serving the surrounding farmland in the past and have now been abandoned. Grasses and climbers overgrow their banks and their surfaces are largely covered in duckweed.</p> <p>This LR has low landscape quality with its limited size and overgrown vegetation but it is relatively intolerant to change. Its sensitivity is medium.</p>					
3.7	Water Ponds at Tit Hang	Low	Medium	Low	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>These are two small water ponds located at Tit Hang. Grasses and climbers overgrow their banks and are present in their immediate vicinity, while much of the water surface on one of the ponds in particular is covered in duckweed.</p> <p>This LR has low landscape quality and small area but it is relatively intolerant to change. Its sensitivity is medium.</p>					
3.9	Kam Tsin Tsuen Pond	Low	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>The pond of this LR is associated with Kam Tsin Tsuen. It has manmade, stone banks with no vegetation and is fenced off from the surrounding walkway.</p> <p>This pond is relatively tolerant to change and its sensitivity is considered to be medium.</p>					
3.11	Chau Tau Tsuen Water Ponds	Medium	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>The ponds of this LR are small in scale associated with Chau Tau Tsuen. The bunds are vegetated by grasses and low shrubs, as well as some trees. They are normally full in the wet season and periodically pumped out by local farmers during the dry season for irrigation.</p> <p>Overall these ponds have medium amenity value and are relatively intolerant to change. This LR's sensitivity is considered to be high.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
KLR 4 – Marsh/ Wetland					
Refers to freshwater marsh/ wetland landscape resources, often found at old river meanders which have been truncated during river channelisation and retraining, overgrown with herbaceous vegetation and often with some areas of seasonal or permanent open water. This LR also includes wetland areas along natural streams around Ma Tso Lung as well as areas that were once ponds but have not been actively managed for a long time.					
Within the Study Area, this LR is found in Long Valley, along the channelised water courses.					
4.1	Marshes in Long Valley	Medium	High	Low	High
This LR sits outside the works area and will not be affected.					
This LR is generally located in the middle of Long Valley agricultural land, including both permanent wet marshes and well vegetated marshes. For the permanent wet marshes, they used to be fish ponds or used for irrigation purposes and have now been abandoned and are not actively managed. Dense emergent vegetation is present in these marshes and shows relatively high diversity including <i>Phragmites karka</i> , sedges <i>Cyperus iria</i> and <i>Kyllinga aromatica</i> , and herbs and climbers <i>Ipomoea aquatica</i> , <i>Polygonum barbatum</i> and <i>Polygonum lapathifolium</i> . For the well vegetated marshes, a large portion of the wetland area is covered with rich and moist topsoil, colonised by common and widespread species such as <i>Brachiaria mutica</i> , <i>Panicum maximum</i> , <i>Bidens alba</i> , <i>Ludwigia perennis</i> and the Common Wetland Fern <i>Cyclosorus interruptus</i> .					
This LR is fairly rare and is relatively intolerant to change and its sensitivity is considered to be high .					
4.2	Mitigation Wetland	Medium	High	Low	High
This LR sits outside the works area and will not be affected.					
Several plots of marsh are located along the Sheung Yue River that borders the Long Valley agricultural land. They were formerly meanders of the river and were isolated during the river channelisation. To mitigate the ecological impact resulting from channelisation, these areas are now managed by a government department to provide marsh habitat, mainly for wetland dependent wildlife. As part of the habitat management, wetland plants and riparian vegetation have been planted. These plants include <i>Commelina diffusa</i> , <i>Hedychium coronarium</i> , <i>Ludwigia perennis</i> and <i>Nelumbo nucifera</i> . Bamboos and trees are also planted along the bunds, e.g. <i>Acacia auriculiformis</i> , <i>Cinnamomum camphora</i> , <i>Hibiscus tiliaceus</i> and <i>Ilex rotunda</i> .					
Mitigation habitats are fairly rare in Hong Kong and additionally, this LR is relatively intolerant to change. Its sensitivity is considered to be high .					
KLR 5 – Plantation					
Refers to medium sized and larger clusters of trees that have been planted and are distinct from natural woodland since they have been planted by man. Common tree species in this LR include native (<i>Ficus microcarpa</i> , <i>Celtis sinensis</i> , <i>Cinnamomum camphora</i> and <i>Macaranga tanarius</i>) and exotic species (<i>Acacia confusa</i> , <i>Casuarina equisetifolia</i> and <i>Melaleuca quinquenervia</i>) and further details are given in the individual LR descriptions.					
Within the Study Area this LR includes patches of plantation to the south of Fanling Highway, in the vicinity of Hak Ka Wai and Wai Loi Tsuen. The roadside vegetation associated with this LR also includes five (5) OVTs as classified by the Leisure, Culture and Services Department (LCSD) and protected by technical circular ETWB TCW No.29/2004. They are all located along Castle Peak Road (ref. No. LCSD/ N45, LCSD/ N47, LCSD/ N49, LCSD/ N50, LCSD/ N51) and the trees species are all <i>Melaleuca quinquenervia</i>					
5.1	Plantation South of Fanling Highway	High	Medium	Medium	Medium
This LR mainly includes two plantation patches. One is close to the Sheung Yue River and is currently managed by a government department as one of the mitigation measures for the ecological impacts arising from the river channelisation. Trees in this plantation area are fairly mature, including mainly planted exotic species (<i>Acacia confusa</i> and <i>Casuarina equisetifolia</i>). Other species in lower abundance include exotic species (<i>Melaleuca quinquenervia</i>) and native species (<i>Celtis sinensis</i> and <i>Macaranga tanarius</i>). The other patch of dense plantation is found just north of Hong Kong Golf Club and trees commonly recorded in this area include native (<i>Cinnamomum camphora</i> , <i>Ficus virens</i> and <i>Macaranga tanarius</i>) and exotic species (<i>Acacia confusa</i> , <i>Bombax ceiba</i> , <i>Melaleuca quinquenervia</i> and <i>Leucaena leucocephala</i>).					
Trees in this LR are dense and mature, providing a relatively high landscape value. However, it is a man-made resource and is able to be recreated reasonably easily meaning it has a high capacity to accommodate change. Its sensitivity is therefore considered to be medium .					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
5.2	Plantation in the Vicinity of Hak Ka Wai	Medium	Medium	High	Medium
<p>This area of plantation is largely associated with the narrow Sheung Yue River channel and the villages of Hak Ka Wai and Tsung Pak Long, including in their playground areas and public facilities. This plantation generally comprises exotic tree species dominated by <i>Acacia confusa</i>. Other species of lower abundance include exotic species (<i>Acacia auriculiformis</i>, <i>Acacia mangium</i>, <i>Araucaria heterophylla</i>, <i>Casuarina equisetifolia</i>, <i>Livistona chinensis</i> and <i>Leucaena leucocephala</i>) and native species (<i>Cinnamomum camphora</i>, <i>Ficus microcarpa</i>, <i>Macaranga tanarius</i>).</p> <p>This LR has a relatively high capacity to accommodate change and its sensitivity is considered to be medium.</p>					
5.4	Old and Valuable Trees (OVT) Castle Peak Road	High	High	Low	High
<p>This LR refers to OVTs found in the roadside planting along Fanling Highway and Castle Peak Road. There are five (5) OVTs as classified by the Leisure, Culture and Services Department (LCSD) and protected by technical circular ETWB TCW No.29/2004. They are all located nearest to Castle Peak Road and reference numbers are. No. LCSD/ N45, LCSD/ N47, LCSD/ N49, LCSD/ N50, LCSD/ N51). All the trees species are <i>Melaleuca quinquenervia</i> of unknown ages, registered in September 2004 and last inspected in August 2012.</p> <p>LCSD/ N45, LCSD/ N47, LCSD/ N50, and LCSD/ N51 all have ‘large size’ as their special characteristic, reaching between 15-18 m in height, 1130-1280 mm diameter at breast height (DBH) and 9-16 m crown spread. LCSD/ N49 is listed as having ‘outstanding form’ as its special characteristic and is 15 m high with a DBH of 670 mm and a crown spread of 8 m.</p> <p>This LR has a low capacity to accommodate change and its sensitivity is considered to be high.</p>					
<p>KLR 6 – Hillside Woodland</p> <p>Refers to woodland areas largely scattered over hillsides, including at the base of hills and associated patches of woodland. This LR is predominantly composed of native tree species and is generally located some distance from human activities and hence disturbance (except at the base of hills where it often borders rural development areas where there is human activity), growing naturally with some understorey vegetation. It can include areas of Fung Shui Woodland growing in hillsides in the vicinity of villages as detailed in the individual descriptions. Common tree species in this LR include <i>Macaranga tanarius</i>, <i>Leucaena leucocephala</i>, <i>Celtis sinensis</i> and <i>Ficus microcarpa</i>. Further details are given in the individual LR descriptions.</p> <p>Within the Study Area of the KTN NDA (DP1, 2, 3 and 4), this LR is found at the hillsides of Ki Lun Shan, Tit Hang, Fung Kong Shan as well as northwest of Ho Sheung Heung.</p>					
6.1	Ki Lun Shan Hillside Woodland	High	Medium	Low	High
<p>This LR lies on the northern foothills of Ki Lun Shan, bordering shrubland/ grassland on the higher ground above and rural villages and lowland woodland in the lowland area below. Due to limited human disturbance, these trees are mature, medium to large in size and growing on hillsides including the foothills. Dominant tree species include <i>Celtis sinensis</i>, <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i>.</p> <p>This LR is considered to be relatively mature and of high quality and it has little capacity to tolerate change. The sensitivity of this LR is considered to be high.</p>					
6.2	Tai Shek Mo Hillside Woodland	High	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>Several small patches of woodland are scattered among the foothills of Tai Shek Mo. Dominant species include exotic trees <i>Acacia confusa</i> and <i>Casuarina equisetifolia</i> as well as native trees <i>Celtis sinensis</i>, <i>Cinnamomum camphora</i>, <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i>.</p> <p>This LR is considered to be relatively mature and of high quality and it has little capacity to tolerate change. The sensitivity of this LR is considered to be high.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
6.3	Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong	High	Medium	Low	High
<p>This LR refers to the narrow, winding and largely continuous patches of woodland in the hillside areas of Ma Tso Lung, Tit Hang and Fung Kong. Woodlands in these areas predominantly border uphill shrubland/ grassland areas and lowland woodlands, and sometimes adjoin rural and industrial areas. Due to limited human disturbance, these trees are mature ranging from medium to large sizes. Dominant tree species include both native and exotic ones. Dominant native trees are <i>Ficus hispida</i>, <i>Cinnamomum camphora</i>, <i>Rhus succedanea</i>, <i>Celtis sinensis</i>, <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i>. Dominant exotic species include <i>Melaleuca quinquenervia</i>, <i>Leucaena leucocephala</i>, <i>Melia azedarach</i>, <i>Acacia confusa</i> and <i>Casuarina equisetifolia</i>.</p> <p>This LR is considered to be relatively mature and of high quality and it has little capacity to tolerate change. The sensitivity of this LR is considered to be high.</p>					
6.4	Ho Sheung Heung Fung Shui Woodland	High	High	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>Ho Sheung Heung Fung Shui Woodland is bound by Ho Sheung Heung Road, Ho Sheung Heung Pai Fung Road and Chung Kuk Path and covers a small hill. It used to be a complete area of woodland with continuous canopy but has been fragmented by recent hill fires. Grasses and shrubs have now colonised the exposed areas to connect the woodland patches. Apart from <i>Aquilaria sinensis</i>, a species of conservation interest, other typical Fung Shui Woodland trees are also found, such as <i>Garcinia oblongifolia</i>, <i>Sterculia lanceolata</i> and <i>Litsea glutinosa</i>. Other dominant trees include native species <i>Celtis sinensis</i>, <i>Ficus microcarpa</i>, <i>Ficus hispida</i>, <i>Macaranga tanarius</i>, <i>Bischofia javanica</i>, <i>Cinnamomum camphora</i>, <i>Microcos paniculata</i> and <i>Schefflera heptaphylla</i> and exotic species <i>Acacia confusa</i>, <i>Bombax ceiba</i>, <i>Dimocarpus longan</i> and <i>Melia azedarach</i> of medium to large sizes.</p> <p>This Fung Shui Woodland has high amenity and cultural value and is intolerant to change. Its sensitivity is considered to be high.</p>					
KLR 7 – Lowland Woodland					
<p>Refers to woodland growing on low lying ground (generally <40 mPD), often found near rural village areas in small, fragmented patches, with differing tree species according to the location. This LR can be found in patches within areas of human activity and also includes some Fung Shui Woodland of particular cultural importance, located adjacent to certain villages as detailed in the individual descriptions. Common plant species in this LR include <i>Acacia confusa</i>, <i>Celtis sinensis</i>, <i>Cinnamomum camphora</i>, <i>Leucaena leucocephala</i> and <i>Macaranga tanarius</i>. Further details are given in the individual LR descriptions.</p> <p>Within the Study Area this LR includes woodlands in lowland areas in Ki Lun Shan, Kam Tsin, Pak Shek Au, Shek Tsai Leng, Tai Tau Leng and North District Hospital.</p>					
7.1	Kwu Tung South Road Lowland Woodland	High	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to a small patch of woodland near the intersection of Kwu Tung Road and Kwu Tung South Road. It is associated with the residential buildings in the lowland area but has a similar plant species composition to the Ki Lun Shan Hillside vegetation. The dominant species include exotic species (<i>Acacia confusa</i> and <i>Leucaena leucocephala</i>) and native species (<i>Celtis sinensis</i>, <i>Cinnamomum camphora</i> and <i>Macaranga tanarius</i>).</p> <p>This LR is considered to be relatively nature and of high quality with relatively little capacity to tolerate change. The sensitivity of this LR is high.</p>					
7.2	Lowland Woodland in the Vicinity of Kam Tsin	Medium	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR is found in several patches in the vicinity of Kam Tsin area, including the woodlands surrounding Casas Domingo and Ascot Park. Woodlands within this LR are in close proximity to residential and recreational areas and therefore potentially suffer disturbance from human activities lowering their quality. This LR also includes a small patch of Fung Shui woodland bordered by Kam Tsin road and Kam Tsin South Road to the west and Kam Tsin village to the east. It includes a number of large <i>Cinnamomum camphora</i> and <i>Dimocarpus longan</i> trees. Elsewhere the dominant species include both native (<i>Ficus microcarpa</i>, <i>Cinnamomum camphora</i>, <i>Macaranga tanarius</i> and <i>Celtis sinensis</i>) and exotic (<i>Acacia confusa</i>, <i>Acacia auriculiformis</i>, <i>Averrhoa carambola</i>, <i>Bombax ceiba</i>, <i>Leucaena leucocephala</i> and <i>Dimocarpus longan</i>) species.</p> <p>This LR is relatively intolerant to change and its sensitivity is considered to be high.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
7.3	Lowland Woodland in Pak Shek Au and Tong Kok	High	Medium	Low	High
<p>This LR refers to the lowland woodlands at Pak Shek Au and Tong Kok, north of Fanling Highway. These woodlands are largely surrounded by adjacent industrial/ open storage areas and therefore potentially suffer from disturbance by human activities. This LR also includes an old developed area west of Dills Corner that has now become completely overgrown with woodland.</p> <p>The trees in this woodland are of medium to large sizes, and are dominated by both native and exotic species. The most abundant native species include <i>Ficus microcarpa</i>, <i>Bischofia javanica</i>, <i>Cinnamomum camphora</i>, and <i>Macaranga tanarius</i>, while exotic species include <i>Acacia confusa</i>, <i>Bombax ceiba</i>, <i>Dimocarpus longan</i>, <i>Delonix regia</i>, <i>Averrhoa carambola</i>, <i>Casuarina equisetifolia</i>, <i>Chukrasia tabularis</i>, <i>Leucaena leucocephala</i> and <i>Spathodea campanulata</i>.</p> <p>This LR has a medium to high amenity value and a low capacity to tolerate change and it sensitivity is considered to be high.</p>					
7.6	Lowland Woodland near Tai Tau Leng	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to a small patch of woodland located near Tai Tau Ling. This woodland patch is largely surrounded by adjacent industrial/ open storage areas and therefore potentially suffered from disturbance by human activities making this resource of lower quality than would normally be expected. Common tree species include <i>Leucaena leucocephala</i>, <i>Acacia confuse</i> and <i>Cinnamomum camphora</i>.</p> <p>This is a landscape resource of medium quality and has a medium tolerance to change, making its sensitivity medium.</p>					
7.7	Lowland Woodland at North District Hospital	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to the small patch of woodland located at North District Hospital. This woodland patches are largely surrounded by residential area and GIC area. Human disturbance is medium. Main species include <i>Leucaena leucocephala</i>, <i>Macaranga tanarius</i>, <i>Acacia confuse</i>, <i>Aleurites moluccana</i>, <i>Ficus microcarpa</i>.</p> <p>This LR has a medium amenity value and medium tolerance to change. Its sensitivity is considered to be medium.</p>					
<p>KLR 8 – Shrubland/ Grassland Mosaic</p> <p>Refers to a mosaic of shrubland and grassland which is usually large in size and uniform in appearance. This LR is typical of the fire-maintained hill-slopes in Hong Kong and common species include grasses such as <i>Imperata koenigii</i>, <i>Neyraudia reynaudiana</i>, <i>Bidens alba</i>, <i>Panicum maximum</i> and <i>Miscanthus spp.</i>, fern <i>Dicranopteris pedata</i> and shrubs <i>Baeckea frutescens</i>, <i>Breynia fruticosa</i>, <i>Litsea rotundifolia</i> var. <i>oblongifolia</i> and <i>Rhaphiolepis indica</i>.</p> <p>Within the Study Area of KTN NDA (DP1, 2, 3 and 4), this LR is found mainly on hillsides, particularly on the upper areas of Fung Kong Shan, Ki Lun Shan, Tai Shek Mo and the Western Range Foothills.</p>					
8.1	Ki Lun Shan Shrubland/ Grassland Mosaic	Medium	Low	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This resource is located on the uplands of Ki Lun Shan and comprises an extensive area. It borders woodlands at the foothills. It is one of the prominent landscape features in the study area and is maintained by periodical hill fires.</p> <p>This LR can re-establish itself fairly easily and is therefore considered to be relatively tolerant to change. Its sensitivity is medium.</p>					
8.2	Fung Kong Shan Shrubland/ Grassland Mosaic	Medium	Low	Medium	Medium
<p>This resource is located on the uphill of Fung Kong Shan. It borders some woodland at the foothills as well as rural development areas. It is maintained by periodic hill fires.</p> <p>This LR can re-establish itself fairly easily and is therefore considered to be relatively tolerant to change. Its sensitivity is medium.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
8.3	Shrubland/ Grassland Mosaic in Tai Shek Mo and the Western Range Foothills	Medium	Low	Medium	Medium
<p>This LR is an extensive area of shrubby grassland on the uplands of Tai Shek Mo and the foothills of the Western Ranges covering Ma Tso Lung. It largely merges into hillside woodland in at the foothills and is sometimes adjacent to some rural and urban development areas. Similar to the other hilly shrubland/ grassland in Hong Kong, this LR is also maintained by periodical hill fires.</p> <p>This LR can re-establish itself fairly easily and is therefore considered to be relatively tolerant to change. Its sensitivity is medium.</p>					
8.4	Shrubland/ Grassland Mosaic along Sheung Yue River and Fanling Highway	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>These shrublands /grasslands are all located in lowland areas and in the vicinity of artificial resources such as channelised watercourses and highways. They are waste grounds through lack of maintenance and have been gradually colonised by weeds and climbers.</p> <p>This LR is of low landscape value and amenity and is relatively tolerant to change. Its sensitivity is low.</p>					
KLR 9 - Agricultural Land					
<p>Refers to land used for agriculture including crops and orchards as well as ornamental plant nurseries. This LR contains a small number of structures such as small irrigation ponds, green houses, equipment sheds and small/ narrow hard paved access paths. It not only contains agricultural vegetation but also some scattered non-agricultural vegetation including some shrubs and trees. It is often an intermediary between areas of development and natural areas.</p> <p>Within the Study Area this LR is mainly found in Long Valley, Tong Kok, Tung Fong and Chau Tau.</p>					
9.1	Long Valley Agricultural Land	High	High	Low	High
<p>This LR in Long Valley consists mainly of wet agriculture and includes both active and inactive fields. Common wetland crops in Long Valley include <i>Ipomoea aquatica</i> and <i>Nasturtium officinale</i>, with some fields cultivated with <i>Eleocharis dulcis</i>, <i>Oryza sativa</i> and <i>Trapa bispinosa</i>. Water lily (<i>Nymphaea</i> sp.) and Lotus (<i>Nelumbo nucifera</i>) are also cultivated in some ponds with shallow water. Dry land crops include <i>Aloe vera var. chinensis</i>, <i>Allium tuberosum</i>, <i>Brassica chinensis</i>, and <i>Lactuca sativa</i>. Fruit trees are present along field bunds including <i>Dimocarpus longan</i>, <i>Litchi chinensis</i> and <i>Magnifera indica</i>.</p> <p>This LR in Long Valley is of good quality and high significance in terms of crop production and being a large contiguous area of agriculture in Hong Kong. Although agricultural land per se is fairly easy to re-establish given the right environment, given the size of this LR and lack of similar areas in Hong Kong, it is relatively intolerant to change and its sensitivity is high.</p>					
9.3	Agricultural Lands in Shek Tsai Leng, Tong Kok and Fung Kong	Low	Low	Medium	Medium
<p>These agricultural lands scattered in the centre of the study area of KTN are associated with the villages in Shek Tsai Leng, Tong Kok and Fung Kong, where they are surrounded by industrial or open storage areas. Most of the agricultural lands within this area are abandoned with weeds and invasive trees (e.g. <i>Leucaena leucocephala</i>) beginning to colonise the land and turning it to wasteland. In some locations, common vegetable plants, such as <i>Lactuca sativa</i>, are still found being cultivated in the small areas of farmland that are still active.</p> <p>This LR is mostly abandoned and does not have high value in terms of crop production but does provide some green space between the hard surfaces of industrial/open storage areas or rural development areas. Agricultural land is fairly easy to re-establish within the right environment, and is relatively tolerant to change but given the greening element amongst an area where there is a lot of industrial/ open storage LR, overall this LR is considered to have medium sensitivity.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
9.4	Other Agricultural Lands in KTN & KTS	Medium	Medium	Medium	Medium
<p>This LR refers to several small and fragmented agricultural lands in different locations within the study area of KTN, including Chau Tau Tsuen, Pak Shek Au, Yin Kong, Kam Tsin and Tai Tau Leng. Most of these agricultural lands have been wholly or partly abandoned and grass and shrubs now grow in the fields. For those fields remaining active, common crops cultivated by farmers include <i>Brassica parachinensis</i> and <i>Lactuca sativa</i>.</p> <p>This LR has medium value in terms of crop production and is relatively tolerant to change. It is considered to have medium sensitivity.</p>					
9.5	Other Orchards Areas in KTN & KTS	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to several small and fragmented orchard areas in different locations within the study area of KTN & KTS, including around the Ma Tso Lung area and west of Fanling Golf Course. Common fruit trees in this LR include <i>Musa x paradisiaca</i>, <i>Artocarpus macrocarpon</i>, <i>Mangifera indica</i> and <i>Dimocarpus longan</i>, where the fruit trees present include <i>Artocarpus macrocarpon</i>, <i>Dimocarpus longan</i> and <i>Carica papaya</i>. Not all these orchard areas are still well looked after and some have been left untreated for a while.</p> <p>This LR has medium value in terms of crop production and being agricultural is relatively tolerant to change although trees generally take longer to grow and produce than crops so ability to accommodate change is medium. Overall this LR is considered to have medium sensitivity.</p>					
KLR 10 - Open Space/ Recreation Area					
<p>Refers to areas that provide recreational use either in the form of playground areas, sports pitches, passive recreation parks or sitting out spaces. There is vegetation associated with this LR, particularly within golf courses where there is maintained grass on the greens, as well as many landscaped trees and some shrubs.</p> <p>Within the Study Area this LR is found at Hong Kong Golf Club, Sheung Shui Community Sports and Lo Wu Saddle Club.</p>					
10.1	Hong Kong Golf Club	High	Medium	High	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>Hong Kong Golf Club is located either side of Fan Kam Road. It is a large private golf club with an extensive greens maintained for golfing activities. Besides the golf course, the club has some built structures including the Club House and facilities to accommodate swimming and tennis, as well as restaurants and accommodation. The Halfway House at Hong Kong Golf Club is graded as a Grade II historic building.</p> <p>Trees, dominated by <i>Melaleuca quinquenervia</i>, are planted around the golf course for landscaping purposes. Water lilies (<i>Nymphaea spp.</i>) are cultivated in the golf course ponds. The entire plantation is well maintained and in good condition.</p> <p>This LR is of high quality and amenity value and covers an extensive area of land; however it is an artificial resource and has a high capacity to accommodate change. Its sensitivity is considered to be medium.</p>					
10.2	Sheung Shui Community Sports	Medium	Medium	High	Medium
<p>Sheung Shui Community Sports is located near Ma Tso Lung Road. It is a multi-sport centre with both outdoor and indoor facilities such as a basketball court, grass football pitch, campsite and clubhouse etc. Trees are planted within this sport centre and include <i>Michelia x alba</i>, <i>Psidium guajava</i>, <i>Dimocarpus longan</i> and <i>Mangifera indica</i>.</p> <p>This LR has medium landscape value and due to its man-made nature has a high capacity to accommodate change. Its sensitivity is considered to be medium</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
10.3	Lo Wu Saddle Club	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>Situated along Ho Sheung Heung Road, Lo Wu Saddle Club has more than 50 years of history and has a stable complex including grass riding arenas as well as clubhouse facilities and a schooling arena. Trees found within this LR include <i>Melia azedarach</i>, <i>Celtis sinensis</i> and <i>Delonix regia</i>.</p> <p>This LR is of relatively high quality and amenity value. The artificial elements can accommodate change relatively easily but the fields where horses graze are less able to accommodate change. Overall this LR's sensitivity is considered to be medium.</p>					
<p>KLR 11 – Urban Development Area</p> <p>Refers to urbanised areas which are heavily developed with considerable hard paved surfaces and limited landscaped areas. These LR's consist mainly of large clusters of medium to high density buildings with a high degree of related infrastructure and often with some high rise developments, with some associated facilities such as post office, police station, hospital, restaurants, supermarkets etc. The LR also includes work sites where construction is ongoing, or sites being cleared/ formed prior to development of a structure that would form part of an urban area. Vegetation in this LR is mainly landscape planting with scattered amenity shrubs and trees and some small public green spaces and private gardens.</p> <p>Within the Study Area it includes Sheung Shui South Urban Area and the existing formation site for the proposed Kwu Tung MTRC Station.</p>					
11.2	Existing formation site for proposed Kwu Tung MTRC Station	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>This site for the proposed Kwu Tung MTRC Station is located near Po Lau Road and is currently being formed prior to constructing a new MTR Station that would form part of an urban area. Trees present in this area include native species such as <i>Macaranga tanarius</i> and exotic species such as <i>Dimocarpus longan</i>, <i>Melia azedarach</i> and <i>Bauhinia variegata</i>.</p> <p>This LR is undergoing site clearance, is of low landscape value and can accommodate change easily. Its sensitivity is considered to be low.</p>					
11.3	Sheung Shui South Urban Development Area	Medium	Low	High	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to the urban area to the south of Sheung Shui Station. Buildings in this area are mainly schools, public servant quarters, public housing estates (Yuk Po Court), private housing estates (Venice Garden) and a sports center. Amenity trees and shrubs are planted to enhance the environment. Dominant tree species found in this LR include <i>Ficus microcarpa</i>, <i>Acacia confusa</i>, <i>Melaleuca quinquenervia</i>, <i>Cassia siamea</i>,</p> <p>This LR has a high ability to accommodate change due to its man-made nature and is considered to have medium sensitivity.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
KLR 12 – Rural Development Area					
Refers to traditional villages, modern villages and small scale, low rise residential areas of lower density dominated by domestic structures (mainly of 2-3 stories) interwoven with roads and narrow paths, but limited other infrastructure. There are some ancestral halls, shrines and temples, and this LR may also contain limited facilities such as small police stations, post offices, and covered water reservoirs and pumping stations and some small, managed, recreational areas (such as football and basketball pitches) and small wasteland areas either wholly or partly covered by weedy or sparse vegetation. This LR often has small orchard areas associated with it (most commonly planted fruit tree species are <i>Dimocarpus longan</i> , <i>Litchi chinensis</i> , <i>Clausena lansium</i> , <i>Mangifera indica</i> and <i>Citrus maxima</i>) and private gardens, as well as amenity planting among the built structures. This LR usually occurs in fragmented patches with agricultural or natural landscape resources adjacent to it.					
Within the Study Area of the KTN NDA (DP1, 2, 3 and 4), this LR is mainly found in Ho Sheung Heung, Long Valley, along Fanling Highway, as well as in the central area of Kwu Tung. This LR also includes water reservoir and rifle range.					
12.1	Ho Sheung Heung Rural Development Area	Medium	Medium	Low	Medium
This LR sits outside the works area and will not be affected.					
Ho Sheung Heung village is bounded by Ho Sheung Heung Pai Fung Road and Chung Kuk Path. In the vicinity (but not part of this LR), there is Ho Sheung Heung Fung Shui Woodland and agricultural land in which water ponds are scattered. Although the village could be classified as relatively modern due to the fact many houses have been replaced by modern housing blocks of 2-3 storeys, some of the residential houses are identified as Historic Buildings (refer to Chapter 11), with Hau Kui Shek Ancestral Hall, a Declared Monument, located on the middle of the village and two Grade 3 listed buildings, Hung Hing Temple & Pail Fung Temple and ‘Sin Wai Nunnery’ located in the south of the village . The whole village is mostly hard-surfaced and has limited softscape treatment but does include some trees (e.g. <i>Dimocarpus longan</i> , <i>Litchi chinensis</i> and <i>Clausena lansium</i>) and private amenity planting (e.g. <i>Plumeria rubra</i> and <i>Thuja orientalis</i>).					
Although most of the houses in Ho Sheung Heung Village are relatively modern, the ancestral hall and graded historic buildings are vulnerable to change since they cannot be easily recreated and overall this LR has medium sensitivity.					
12.2	Rural Development Area in Long Valley, Yin Kong, Tsung Pak Long and Hak Ka Wai	Medium	High	Low	High
This LR lies between the Shek Sheung River and Fanling Highway to the southeast of Long Valley. It covers three villages: Yin Kong Tsuen, Hak Ka Wai and Tsung Pak Long.					
Yin Kong Tsuen is a traditional village undergoing transformation. Some of the existing residential houses in the northern part of the village are identified as historical buildings. Earth shrines associated with Fung Shui Trees (<i>Ficus microcarpa</i> in most cases) are present including the Grade 2 listed Earth God Shrine of Kam Tsin historic building. In addition an old western styled Enchi Lodge (Grade 2 historic building) is located on the southern part of the village. Between the northern and southern parts of the village there is grassland which would have been agricultural land in the past. On the other hand, the modern aspect of Yin Kong Tsuen is presented by many well-established modern village houses as well as facilities such as small-scaled playgrounds.					
Hak Ka Wai is a traditional village with around 100 years of history. It consists of two rows of residences, an ancestral hall (the Wong Shek Chung Ancestral Hall), a study hall, an entrance gate, enclosing walls and a watch tower. This village is registered as a Grade 1.					
Tsung Pak Long is a traditional village undergoing transformation. It contains ancestral halls, earth shrines, a school and a church in traditional style to its northwest. Most areas within this LR are hard-surfaced and have limited vegetation except those private amenity plantings, in which fruit trees <i>Dimocarpus longan</i> , <i>Carica papaya</i> and <i>Citrus reticulata</i> and landscaping shrub <i>Duranta erecta</i> and <i>Murraya paniculata</i> are commonly found.					
The historic buildings located in this LR, particularly the relatively large area of Hak Ka Wai village, cannot be easily recreated and this LR is relatively intolerant to change. Overall it is considered to have high sensitivity.					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
12.5	Rural Development Area to the North of Hong Kong Golf Club	Medium	Low	High	Low
<p>This LR mainly covers one modern village, Golf Parkview, consisting of residential 4-5 storey blocks enclosed by walls but also includes some buildings and associated landscaped area in the middle of a plantation area Golf Parkview is fairly new and being a man-made structure has a reasonable capacity to accommodate change despite some significant landscaping. The buildings within the plantation make up Oi Yuen Villa, Lot No. SSL 2RP and is currently (May 2013) proposed as a Grade 1 historic building.</p> <p>Golf Parkview is fairly modern and has a reasonable capacity to accommodate change despite some quality landscaping.</p> <p>Overall this LR is considered to have low sensitivity.</p>					
12.6	Kam Tsin Rural Development Area	Medium	Low	Medium	Medium
<p>This LR refers to the rural area around Kam Tsin located at the south east of the KTN NDA. It covers a number of well-established villages and developments, including Kam Tsin Tsuen, The Royal Oaks, Ascot Park and Casas Domingo. It also contains community facilities such as kindergarten and schools. Planted trees are found between village houses and some grown naturally along the edge of the roads and villages.</p> <p>Trees commonly found in this LR include both native (e.g. <i>Bauhinia blakeana</i>, <i>Celtis sinensis</i> and <i>Bischofia javanica</i>) and exotic (e.g. <i>Melaleuca quinquenervia</i> as well as some fruit trees such as <i>Dimocarpus longan</i> and <i>Psidium guajava</i>) species.</p> <p>Overall, this LR is dominated by domestic residencies, its landscape amenity, significance and quality is moderate and it has a medium ability to tolerate change due to the vegetation within the LR, making its overall sensitivity medium.</p>					
12.7	Kwu Tung Fresh Water Service Reservoir	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>Kwu Tung Fresh Water Service Reservoir is a permanent structure located on Ki Lun Shan for the purpose of fresh water storage. This area is hard-paved and covered with a grass roof but with otherwise limited vegetation diversity.</p> <p>Due to its low landscape value and high ability to accommodate change, it has low sensitivity.</p>					
12.8	Rural Development Area of Europa Garden and Valais	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR lies south of Fanling Highway and west of Sheung Yue River. The groups of houses in this LR are low-rise private residential buildings of 2-3 stories. Trees are present both in the public areas such as roads (e.g. <i>Acacia confusa</i>, <i>Casuarina equisetifolia</i> and <i>Thevetia peruviana</i>) and within the private gardens where <i>Dimocarpus longan</i> and <i>Averrhoa carambola</i> as well as some palm trees that are cultivated. This LR also contains one historic graded building, the Grade 2 listed Lady Ho Tung Welfare Centre (Main Block and Bungalow).</p> <p>Most components within this LR are man-made structures and are tolerant to change. The exception is the Grade 2 listed historic building, but since this forms a very small proportion the LR, overall its sensitivity is considered to be low.</p>					
12.9	Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang	Medium	Medium	Medium	Medium
<p>Rural area in Shek Tsai Leng mainly includes Dills Corner Garden and its associated facilities. Dills Corner Garden is located along Po Lau Road and is a home for the aged. It contains several rows of 2-storey houses and is enclosed by fences. Except for several individual, large trees along the fences (mostly <i>Ficus microcarpa</i>), this area is almost entirely hard-surfaced with limited landscaping. Nevertheless, well maintained trees are planted along the roads in this area and dominant species include <i>Acacia confusa</i> and <i>Melaleuca quinquenervia</i>. There is also a football pitch, playground and school in the vicinity.</p> <p>The rural area in Tong Kok, Fung Kong and Tit Hang contains loosely grouped village houses in a traditional style, with some graves of Hau clan scattered in the northern part of Fung Kong Tsuen. All the villages are mostly hard-surfaced with small houses and winding paths and have limited softscape treatment but do include some abandoned fruit trees (e.g. <i>Dimocarpus longan</i>, <i>Citrus maxima</i>, <i>Musa x paradisiaca</i> and <i>Clausena lansium</i>) and private amenity planting.</p> <p>This is a LR with a medium capacity to tolerate change and its sensitivity is considered to be medium.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
12.10	Lo Wu Rifle Range	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>Lo Wu Rifle Range is located between Fung Kong Shan and the Tai Shek Mo mountain. It is a large piece of grassland used by the Police. Many mature trees grow naturally in the surroundings, including <i>Bauhinia blakeana</i>, <i>Macaranga tanarius</i>, <i>Celtis sinensis</i> and <i>Leucaena leucocephala</i>.</p> <p>This LR is a manmade area but it is green land not hard surface and so has a medium tolerance to change. The sensitivity of this LR is medium.</p>					
12.11	Rural Development Area in Ma Tso Lung	Low to Medium	Medium	Low	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to the rural area at Ma Tso Lung on the northwest of the KTN NDA Study Area. It mainly covers two villages, i.e. Ma Tso Lung San Tsuen and Shun Yee San Tsuen, which are relatively small, mainly consisting of more traditional single storey houses. Trees associated with this area include some fruit trees such as <i>Diospyros kaki</i>, <i>Musa x paradisiaca</i> and <i>Dimocarpus longan</i> as well as other native and exotic trees such as <i>Bauhinia blakeana</i>, <i>Leucaena leucocephala</i>, and <i>Bombax ceiba</i>.</p> <p>Although these structures cannot be recreated easily and have low ability to accommodate change, their landscape quality and maturity are not high and overall this LR has medium sensitivity.</p>					
12.12	Fanling Lodge	High	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>Fanling Lodge is a two storey house in a wooded lot within the Hong Kong Golf Club off Castle Peak Road - Kwu Tung with a helicopter pad on the lawn of the landscaped gardens. Amenity trees and shrubs species include <i>Magnolia grandiflora</i>, <i>Melaleuca quinquenervia</i>, <i>Eucalyptus citriodora</i>, <i>Livistona chinensis</i> and <i>Bougainvillea spectabilis</i>.</p> <p>This LR has cultural significance but being man-made still has a reasonable capacity to accommodate change and is considered to have medium sensitivity.</p>					
12.13	Chau Tau Rural Development Area	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>Chau Tau Tsuen is a traditional village in San Tin with settlements of mainly "Man" clan. There is a monumental archway which was completed in 2006 with funding from the village and subsidised by the MTR Company. The ancestral hall was rebuilt in 1925 and 1987 respectively, where worshipping takes place at important festivals. Many houses have been replaced by modern housing blocks of 2-3 storeys. Fruit trees such as <i>Musa x paradisiaca</i> and <i>Dimocarpus longan</i> are commonly found in the village.</p> <p>This is a LR with a medium capacity to tolerate change and its sensitivity is considered to be medium.</p>					
<p>KLR 13 - Industrial/ Open Storage</p> <p>Refers to areas which are heavily adapted for human industrial use, such as factory facilities, waste processing plants and other industrial buildings, often with some open areas for storage, parking or other associated activities. These areas include small roads within them together with some concrete lined drainage channels. There is very little existing vegetation within this LR.</p> <p>Within the Study Area this LR is mainly found in areas adjacent to villages and main roads, such as Yin Kong industrial/ open storage, Shek Tsai Leng, Tong Kok and Fung Kong open storage and Pak Shek Au open storage. This LR can also be found at the foothill of more natural LRs, often on flatter land and includes Ki Lung Shan Foothill industrial/ open storage.</p>					
13.1	Sheung Shui Industrial Area	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR is located along the east boundary of the Study Area and is part of Sheung Shui industrial area. It contains Shek Wu Hui Sewage Treatment Works as well as several warehouses, industrial buildings and open storage areas. Planted trees are found along the roads and dominant species include <i>Acacia auriculiformis</i>, <i>Acacia confusa</i> and <i>Leucaena leucocephala</i>.</p> <p>The rest of this LR is largely used for open storage and car parks. Trees within this area are not actively managed and grasses occupy many places between the car parks. Tree species commonly found include <i>Leucaena leucocephala</i>, <i>Bauhinia blakeana</i>, <i>Bauhinia variegata</i>, <i>Macaranga tanarius</i>, <i>Delonix regia</i>, <i>Cassia siamea</i>, <i>Bombax ceiba</i>, <i>Syzygium jambos</i>, <i>Ficus virens</i>, <i>Mangifera indica</i> and <i>Acacia auriculiformis</i>.</p> <p>This LR has relatively low landscape amenity value and consists mostly of modern man-made structures that can be easily recreated. Its sensitivity is considered to be low.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
13.2	Industrial/ Open Storage Area in Yin Kong	Low	Low	High	Low
<p>This is an isolated plot beside Yin Kong Tsuen and is now mainly used for open storage and car park. Trees growing within this LR include <i>Macaranga tanarius</i>, <i>Ficus microcarpa</i>, <i>Celtis sinensis</i>, <i>Araucaria heterophylla</i>, <i>Carica papaya</i>, <i>Artocarpus macrocarpon</i> and <i>Syzygium jambos</i>.</p> <p>This LR predominantly consists of man-made structures which have a high capacity to tolerate change and have low landscape value. This LR is considered to have low sensitivity.</p>					
13.3	Industrial/ Open Storage in Shek Tsai Leng, Tong Kok and Fung Kong	Low	Low	Medium	Low
<p>This LR is located around the villages of Shek Tsai Leng, Fung Kong, Tung Fong and Tong Kok an. This continuous area is largely used for open storage and car parks and has a network of small road running within it, some with associated concrete drainage channels. It also has several waste processing plants within this LR. In addition, this LR has two graded historic buildings, one just west of where the Sheung Yue River flows under Fanling Highway (Yeung Yuen Grade 3 listed building) and one in Shek Tsai Leng (Yan Wah Lo Grade 3 listed building).</p> <p>Trees within this LR are not actively managed and grasses occupy many places between the car parks. Tree species commonly found in the area include <i>Macaranga tanarius</i>, <i>Celtis sinensis</i>, <i>Bauhinia blakeana</i>, <i>Mallotus paniculatus</i>, <i>Ficus microcarpa</i>, <i>Acacia confusa</i>, <i>Casuarina equisetifolia</i>, <i>Leucaena leucocephala</i>, <i>Hibiscus tiliaceus</i>, <i>Dimocarpus longan</i>, <i>Livistona chinensis</i>, <i>Morus alba</i>, <i>Psidium guajava</i> and <i>Artocarpus macrocarpon</i>.</p> <p>This LR predominantly consists of man made structures which have a high capacity to tolerate change and have low landscape value. The exceptions are the two graded historic buildings which have low ability to change and are rarer, but since they form a very small part of this LR, overall it is considered to have low sensitivity.</p>					
13.4	Industrial/ Open Storage in Pak Shek Au, Chau Tau and Foothill of Ki Lun Shan	Low	Low	High	Low
<p>This LR refers to a lowland area surrounded by woods on southwest of the Study Area. It comprises factories, open storage and car park areas. Due to the lack of routine management, grasses and climbers have occupied many places and trees found in this area include <i>Macaranga tanarius</i>, <i>Celtis sinensis</i>, <i>Dimocarpus longan</i>, <i>Leucaena leucocephala</i> and <i>Bombax ceiba</i>.</p> <p>This LR predominantly consists of man-made structures of little landscape value which have a high capacity to tolerate change. This LR is considered to have low sensitivity.</p>					
KLR 14 – Major Transportation Corridor					
<p>Refers to Fanling Highway running west-east along the south of the Study Area, all the associated major intersections and key adjacent roads including Castle Peak Road. There is tree planting along the sides of the roads consisting of a variety of indigenous and exotic species. In addition, there is some planting along the central divider (median) in some sections, including of amenity shrubs. In addition, drainage channels associated with the roads/highways are considered part of this LR as they are an integral feature of the roadscape. Within the study area of KTN NDA, major transportation corridor also includes the MTRC East Rail.</p> <p>Within the Study Area, the roadside vegetation associated with this LR also includes five OVTs as detailed in the KLR5 plantation LR (KLR-5.4).</p>					
14.1	Fanling Highway and nearby associated roads.	Medium	Medium	Medium	Medium
<p>This LR is includes the Fanling Highway (Kwu Tung section), Castle Peak Road running parallel and nearby associated roads, which are the major transportation routes connecting Kwu Tung to its adjacent areas. The roads run west-east along the south of the Study Area and there are areas of established roadside planting along the sides of the roads as well as in the central divider (median) in some sections, including of amenity shrubs. In addition along parts of the roads, there are open drainage channels lined by the roadside planting. Trees commonly used for roadside planting in this area include <i>Melaleuca quinquenervia</i>, <i>Bombax ceiba</i>, <i>Ficus microcarpa</i>, <i>Casuarina equisetifolia</i>, <i>Acacia confusa</i> and <i>Bauhinia blakeana</i>.</p> <p>Despite being a man-made resource, the landscape value of this LR is increased by the significant roadside planting, in which several individual OVTs are present but considered separately (See KLR-5.4) and its sensitivity is considered to be medium</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
14.2	MTRC East Rail (to/from Lo Wu)	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR mainly refers to the MTRC East Railway leading to Lo Wu Station running south-north. The Lok Ma Chau Spur Line running west-east is underground. No significant planting is found along the railways and trees growing randomly in its vicinity are dominated by <i>Leucaena leucocephala</i>.</p> <p>This resource is highly utilised and well linked but it is man-made with low landscape value and a high ability to accommodate change. Its sensitivity is low.</p>					

Table 12A.3.2 – Landscape Resources and their Sensitivity- KTN NDA (DP1, 2, 3 and 4)

Id No.	Landscape Character Area (LCA)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
KLCA-1	Natural Hillside Landscape	High	High	Low	High
<p>Refers to large hillside areas which are dominated by shrubland, grassland and some woodland patches.</p> <p>Within the Study Area the LCA encompasses Tai Shek Mo (183 mPD), Western Range of Tai Shek Mo (Ma Tso Lung and Lok Ma Chau) (144 mPD), Ki Lun Shan (222 mPD), and Fung Kong Shan (40 mPD).</p> <p>Tai Shek Mo lies to the north of the Study Area. The primary ridgeline extends southward while the Western Range ridgeline runs approximately NE-SW, covering Ma Tso Lung and Lok Ma Chau. These two sections of LCA are separated by lower land and to their south the smaller Fung Kong Shan is located.</p> <p>Ki Lun Shan lies to the southwest of the Study Area.</p> <p>This landscape area is natural and has high landscape quality. Its significance is also high and it is has a low capacity to accommodate change. Its sensitivity is considered to be high.</p>					
KLCA-2	Rural and Urban Peripheral Village Landscape	Medium	Low	Medium	Medium
<p>Refers to rural village areas and village areas on the fringes of urban developments, including relic villages. This LCA is dominated by small to medium sized villages with modern and traditional houses and some ancestral halls, interspersed with small agricultural plots and comprises a broad mix of other land uses including water ponds, schools, sports grounds, and playgrounds, some open storage areas and car parks, and a golf course to the southeast of Kwu Tung. This LCA also has some small patches of woodland as well as vegetation associated with the villages and park areas.</p> <p>Within the Study Area for KTN DPs this LCA can be mainly divided into five districts at Lo Wu, Ma Tso Lung and Pak Shek Au on the west, Kwu Tung in the middle, Kam Tsin and Sheung Shui Heung on the east. Some of the villages in this LCA are located at foothills, including Ho Sheung Heung, Ma Tso Lung Shun Yee San Tsuen and Pak Shek Au, while some other villages are located in lowland areas, such as Tsung Pak Long, Tong Kok and Shek Tsai Leng.</p> <p>This LCA is considered to have medium tolerance to change and moderate amenity value. Its sensitivity is therefore medium.</p>					

Id No.	Landscape Character Area (LCA)	Quality & Maturity (High/ Medium/ Low)	Rarity (High/ Medium/ Low)	Ability to Accommodate Change (High/ Medium/ Low)	Sensitivity (High/ Medium/ Low)
KLCA-3	Urban Development Landscape	Low	Medium	High	Low
<p>This LCA sits outside the works area and will not be affected.</p> <p>Refers to urban areas with significant numbers of high rise developments and extensive transport infrastructure. It also contains a hospital, car parks and open areas associated with urban development such as playgrounds and small parks and sitting out areas. This LCA has little if any natural vegetation but does include some municipal landscaping.</p> <p>Within the Study Area for KTN DPs this LCA is found only in the southeast and includes the high-rise developments such as the Choi Yuen Estate in Sheung Shui</p> <p>This is an urban development landscape and has reasonable tolerance to change. The sensitivity of this LCA is considered to be low.</p>					
KLCA-4	Industrial Landscape	Low	Low	High	Low
<p>Refers to areas comprising a broad mix of land uses including factories, utility facilities, workshops, open storage and some channelised water courses. It is commonly located on low lying ground or at the base of hills and may include small and fragmented areas of residential houses and their associated agricultural land. There is little significant vegetation among this built environment, but small patches of vegetation do exist, particularly along the channelised river.</p> <p>Within the Study Area for KTN DPs this LCA is found to the west near the San Tin Interchange, in the east at the Shek Sheung River and the area east of this river, and more centrally bordering Ma Tso Lung Road, Shek Tsai Leng and east of Fung Kong Shan.</p> <p>This LCA usually contains abandoned facilities that are able to accommodate change. Except for the significant planting along the Ng Tung River, most areas in this LCA have little vegetation, resulting in a low landscape amenity. Therefore, its sensitivity is considered to be low.</p>					
KLCA-5	Lowland Agricultural Landscape	High	Medium	Low	High
<p>Refers to large areas dominated by cultivated land with scattered small villages and low-rise buildings and may also include some fishponds and irrigation ponds. This LCA is mostly found among lowlands and floodplain areas.</p> <p>Within the Study Area the key area of this LCA is found at Long Valley which is a highly sensitive LR in itself. And there are also some isolated farmlands at Chau Tau and Ma Tso Lung. Tree vegetation is generally sparse and restricted to field boundaries, adjacent to local houses and, together with bamboo, along the banks of Sheung Yue River.</p> <p>The value and significance of the LCA is high, largely due to it encompassing the high quality, contiguous agricultural land of the core Long Valley area. It has little tolerance to change and its sensitivity is considered to be high.</p>					
KLCA-6	Major Transportation Corridor Landscape	Medium	Medium	Medium	Medium
<p>Refers to major highway and railway areas, with their associated buildings.</p> <p>Within the Study Area for KTN DPs, Fanling Highway is a major transport route stretching in an east west direction located at the south boundary of the Study Area. It has two key connection junctions at Fan Kam Road to the east and San Sham Road to the west. In addition, the MTRC East Rail leading to the Lo Wu Station runs south-north in the east of the study area. Lok Ma Chau Spur Line branches off from Sheung Shui Railway Station to Lok Ma Chau Station, of which this section is underground passing through KTN NDA.</p> <p>The resource is considered to be highly tolerance to change and its sensitivity is medium.</p>					
KLCA-7	Major Water Course Corridor Landscape	Medium	High	Medium	Medium
<p>Refers to modified water courses channelised with concrete and also includes the vegetation associated with the water course, both within the channel and along the banks as well as in the ridge of the banks.</p> <p>Within the Study Area of KTN DPs, this LR includes Sheung Yue River, Shek Sheung River and San Tin Eastern Main Drainage Channel.</p> <p>The landscape amenity and significance of this LCA are medium to high. Due to its partially artificial state, it is relatively tolerant to change and its sensitivity is considered to be medium.</p>					

12A3.3 Summary of Baseline Conditions

The LRs within the study area which have been recognised for their higher sensitivity are predominantly natural streams, woodland, marsh/wetland, selected water ponds. Other resources such as agricultural land and rural development areas may also have high sensitivity due to certain elements or characteristics such as quality of the environment, maturity of landscape planting or historically significant buildings/structures. The baseline conditions for LRs are summarised below.

LRs associated with water are generally considered to have a higher landscape value. All the natural streams (those at Tai Shek Mo (KLR-2.2), Ki Lun Shan (KLR-2.3) and Ma Tso Lung (KLR-2.4) are rated high sensitivity. This rating takes into account the entirety of the water course and the nature of the stream in relation to whether the channel is mainly natural, its seasonality of flow or whether it has sections which have been altered by human activity. The streams in Kwu Tung (KLR-2.1) were generally natural but degraded by pollution, with seasonal flows and some sections fortified by concrete banks such that they were considered less sensitive and rated 'medium'.

Similarly to watercourses, ponds and marsh/wetland are generally considered a valuable landscape resource as many incorporate natural planting, strengthen rural character and have strong cultural connections in terms of agricultural production and land use pattern. Ponds located at Ho Sheung Heung (KLR-3.1), in Long Valley associated with agriculture (KLR-3.2) and beside Kam Hang Road (KLR-3.5) and in Chau Tau Tsuen (KLR-3.11) are all considered as having 'high' sensitivity. In addition all the marsh/wetland areas including those in Long Valley (KLR-4.1) and the mitigation wetland along the Sheung Yue River (KLR-4.2) are all rated with high sensitivity although they do not cover a large area.

Trees are considered as precious LRs which have a vital role in landscape character, diversity, naturalness and maturity of a landscape. As a result all areas of woodland within the NDA (both hillside and lowland) are rated as having 'high' sensitivity with the exception of some woodland near Tai Tau Leng (KLR-7.6) and near North District Hospital (KLR-7.7) which have been degraded. In addition, the five OVTs (KLR-5.4) located within the roadside planting near Fanling Highway and Castle Peak road are highly sensitive due to their maturity. Scattered, isolated and small patches of man-made plantation are considered to be less valuable and therefore less sensitive.

KLR8-Shrubland/Grassland Mosaic surrounds the study area, associated with the local hillsides and prominences such as Ki Lun Shan (KLR-8.1), Fung Kong Shan (KLR-8.2) and Tai Shek Mo and the Western Range foothills (KLR-8.3). These LR are generally located on undeveloped areas of natural topography however they are managed using periodic fires, therefore their overall sensitivity is considered to be medium. Areas of shrubland/grassland mosaic are found along the Sheung Yue River and Fanling Highway (KLR-8.4). In this case the LR is established on man-made landscape feature such as road verges or artificial watercourse channels therefore the sensitivity is considered to be low.

While most agricultural LRs have medium sensitivity due to their varying quality and use (vacant or in-use), the agricultural land in Long Valley (KLR-9.1) is a large contiguous area which would be difficult to recreate in Hong Kong due to a lack of similar areas, this agricultural land is therefore recognised as having high sensitivity.

Open Space/ Recreation Area (KLR-10) covers three areas which have been identified as having a medium sensitivity. These are Hong Kong Golf Club (KLR-10.1), Sheung Shui Community Sports (KLR10.2) and Lo Wu Saddle Club (KLR-10.3). Whilst all three LRs are considered to have medium to high amenity value, these are man-made/artificial landscapes are therefore can accommodate change more readily.

Most rural development areas (KLR-12) are identified as having a medium sensitivity as a result of varying quality of built form, vegetation cover and hard landscape treatments. The rural development area in Long Valley, Ying Kong, Tsung Pak Long and Hak Ka Wai has a number of historical buildings within it, with the whole of Hak Ka Wai village is designated as Grade 1. This KLR-12.2 is therefore considered to be more sensitive than other rural development areas and has 'high' sensitivity.

It should also be noted that there is a considerable amount of open storage/ industrial land within the Study Area which is highly degraded in terms of landscape quality and changeable in terms of characteristics; all of these areas are considered of low quality and sensitivity.

With regards to LCAs, Natural Hillside Landscape (KLCA-1) is considered highly sensitive, largely due to its high landscape quality and inability to accommodate change. The Lowland Agricultural Landscape encompassing the Long Valley area (KLCA-5) similarly has high sensitivity given it includes a large contiguous area of high quality agricultural land in the Long Valley area (see KLR-9.1) and has a low ability to accommodate change. Rural and Urban Peripheral Village Landscape (KLCA-2) and Major Water Course Corridor Landscape (KLCA-7) have medium sensitivity, largely due to their moderate amenity value and the Major Transport Corridor Landscape (KLCA-6) also has medium sensitivity mainly due to the extensive planting along the Fanling Highway and Castle Peak Road conferring high greening and lowering this LCA's ability to accommodate change. Urban Development Landscape (KLCA-3) and Industrial Landscape (KLCA-4) have low sensitivity due to their low landscape quality and high ability to accommodate change.

12A.4 Details of Site Formation Impacts – KTN Schedule 2 DPs 1, 2, 3 and 4

The proposed DPs relate to the provision of new road infrastructure within the KTN NDA together with improvements to existing road and highway provision linking to the site. A summary of the likely site formation impacts for each DP is provided below:

12A4.1 Schedule 2 DP 1 - San Tin Highway and Fanling Highway Kwu Tung Section Widening

Fanling Highway (section between Pak Shek Au Interchange and Po Shek Wu Interchange) is proposed to be widened from the existing dual-three configuration to dual-four configuration. This section of road is mainly at-grade and has bridge structures across Sheung Yue River and Kwu Tung Road. The majority of earthworks works are associated with the western section, especially around the new Pak Shek Au Interchange. Due to the land constraints on the southern side of the highway, the widening would mainly be taken place on the northern side.

Site formation within this works area will require:

Soil stripping and clearance of ground vegetation throughout the works area where this encroaches north into the undeveloped (soft landscape area) along Castle Peak Road.

Felling of trees where the widened corridor will encroach into neighbouring woodland and the current road verge alignments.

Demolition of walls, boundary treatments and structures which line the northern boundary of the DP (along Castle Peak Road).

Demolition/ dismantling of existing road structures such as pedestrian footbridges, signage and road surfaces.

Cutting of slopes and filling of land, in particularly agricultural land and ditches, along the northern boundary of the DP.

Excavation and reconfiguration works within the existing road corridor.

Construction of new road surfaces, vehicular barriers, signage, pedestrian footbridges (5no), central reserves (median) and bridges (crossing Sheung Yue River).

Construction of noise barriers of different height configurations.

Construction of associated surface water drainage infrastructure.

Soil re-profiling and soft landscaping works to verges.

12A4.2 Schedule 2 DP 2 – Castle Peak Road Diversion

The existing Castle Peak Road Kwu Tung Section is a typical single 2-lane carriageway. Pedestrian footpaths are provided on the northern side of Castle Peak Road only. The existing Castle Peak Road - Kwu Tung Section provides access to Kwu Tung North, Ho Sheung Heung and Yin Kong. It connects with the Kwu Tung Road at Pak Shek Au Interchange and through a vehicular bridge near Yin Kong. At the eastern end, Castle Peak Road connects to the Fan Kam Road near Po Shek Wu Interchange. The alignment of Castle Peak Road will be pushed further north towards KTN NDA to accommodate the additional width of the Fanling Highway. Earthworks will be required to bring the diverted and realigned sections of the road up to the same grade as the Fanling Highway.

There are five OVTs found along Castle Peak Road (ref. No. LCSD/ N45, LCSD/ N47, LCSD/ N49, LCSD/ N50, LCSD/ N51). The proposed road works will retain these trees insitu and incorporate them into a widened central median.

Site formation works are broadly similar to DP1 however the scale of the road is much smaller albeit a new road formation rather than widening of existing highway infrastructure; formation works will include:

Soil stripping and clearance of ground vegetation throughout the works area where this encroaches north into the undeveloped (soft landscape area) to the north of the existing road alignment.

Felling of some small areas of trees to the western extent of the scheme around Pak Shek Au and isolated patches along the proposed alignment as it travels east.

Demolition of walls, boundary treatments and structures along the proposed alignment.

Cutting of slopes and filling of land, in particularly agricultural land and ditches throughout the alignment.

Construction of new road surfaces and pedestrian footpaths.

Construction of noise barriers of different height configurations.

Soil re-profiling and soft landscape works to verges.

12A4.3 Schedule 2 DP 3 – KTN NDA Road P1 and P2 (New Road) and associated new Kwu Tung Interchange (New Road) and Pak Shek Au Interchange Improvement (Major Improvement)

Road P1 and P2 are the primary distributor roads connecting to KTN NDA from the Fanling Highway.

An off line at-grade roundabout is proposed to connect the Pak Shek Au Interchange to the west of KTN NDA. The slip road for traffic from Tai Po to Kwu Tung at Pak Shek Au Interchange will be maintained. Its connection with the service roads (Castle Peak Road and Kwu Tung Road) will also remain. The slip road for traffic from Kwu Tung to Tai Po will be diverted to connect with the offline interchange, facilitating the additional slip roads for diverging traffic from Yuen Long. The Pak Shek Au Interchange will connect with the diverted Castle Peak Road through an underpass single 2-lane carriageway beneath these slip roads.

A new grade-separated interchange forming Kwu Tung Interchange, is proposed as the major access from the Fanling Highway to KTN NDA. It will be an elevated roundabout with slip roads connecting Fanling Highway in all direction movements. It is close to but does not affect the planned CDA zones on the two sides of the expressway. Further north, a dual 2-lane elevated primary distributor road is proposed to carry the traffic from this connection point to KTN NDA. The primary distributor road crosses Sheung Yue River and connects to an at-grade roundabout. Portal structure and sufficient headroom will be allowed for the diverted

Castle Peak Road to run below, in order to avoid encroachment to the graded historic buildings of Enchi Lodge and the Earth God Shrine.

Site formation works will encompass:

Soil stripping and clearance of ground vegetation to the east and west of the proposed KTN NDA development area through a series land uses including agriculture and hillside woodland.

Felling of woodland areas close to Pak Shek Au.

Demolition of walls, boundary treatments and structures along the proposed alignment.

Cutting of slopes and filling of land, in particularly relating to hillside woodland on the western ranges, streams, a pond and agricultural land and ditches within the works area.

Construction of new road surfaces and pedestrian footpaths.

Construction of noise barriers of different height configurations.

Soil re-profiling and soft landscape works to verges.

12A4.4 Schedule 2 DP 4 – KTN NDA Road D1 to D5 (New Road)

DP4 relates to the construction of new district distributor roads within the KTN NDA area. These roads are split into three locations, firstly two branch sections which connect to Castle Peak Road and roads P1 and P2 to the east and west of the site. A separate loop section is proposed which encompasses the northern section of the NDA.

Road D3-5 will be at grade throughout the scheme, matching the finished levels of the development plots to which they provide access, both cut and fill works will be required through the area to achieve the desired vertical and horizontal alignment.

Site formation works will include:

Soil stripping and clearance of ground vegetation throughout the works area including agricultural land and hillside woodland.

Felling of lowland woodland close to Pak Shek Au.

Demolition of walls, boundary treatments and structures along the proposed alignment.

Cutting of slopes and filling of land, in particularly streams, a pond and agricultural land and ditches within the works area.

Construction of new road surfaces and pedestrian footpaths.

Construction of noise barriers of different height configurations.

Soil re-profiling and soft landscape works to verges.

12A.5 Sources of Impacts

During the construction stage, potential landscape and visual impacts will generally result from the following:

- Site clearance including demolition of structures, tree removal/transplantation and other vegetation removal would have a negative landscape and visual impact due the appearance of construction activities and loss of vegetation cover. Demolition of unsightly or temporary structures may generate positive impacts.
- Site formation works including cutting of slopes and filling of land e.g. of farmland, streams would generate negative impacts as a result of the loss of these features of high landscape value.
- Stockpiling of construction and demolition materials, including existing topsoil, storage of construction equipment and mechanical plant would generate negative visual impact as a result of these operations intruding into existing views.
- Construction of at-grade and above ground facilities including, bridges, viaducts, interchanges, roads and noise barriers are likely to generate negative visual impacts as a result of these operations intruding into existing views and the scale of the construction footprint.
- Temporary structures within the Project Site including site offices, boundary fencing/hoarding and parking areas would generate negative visual impact due to generally low aesthetical value of these types of structures.
- Re-alignment of roads would generate negative landscape and visual impacts due to the visibility of construction operations and the scale of the construction footprint.
- Re-alignment, culverting and filling of streams and other watercourses would generate negative impacts due to the loss of visual amenity and natural value provided by these resources.

During the operation phase, potential impacts will result from the following:

- Operation of new roads including intersections and viaducts would generate negative visual impacts due to the potential obstruction of existing views visibility of new structures, and traffic movements.
- Provisions of noise mitigation structures are likely to generate some negative visual impacts due to the appearance of new built form and potential to obstruct existing views. This may be balanced where these barriers may provide screening from visual detractors.
- Residual impacts from loss of trees and vegetation during the construction phase would generate negative landscape and visual impacts in the short term until compensation planting has established and replaced these resources.
- Landscaping operations.

12A.6 Landscape Impact Assessment

The landscape impact assessment has been carried out taking into consideration the baseline LRs and LCAs described in **Section 12A.3** and potential impacts described in **Sections 12A.4 and 12A.5**.

Further details of the potential landscape impacts are provided for each DP below.

The magnitude of change on LRs and LCAs as a result of DP Package A are presented in **Tables 12A.6.1 and 12A.6.2** below.

Landscape Impacts are mapped on Figure **12.52.20, 12.52.24 to 31**.

Table 12A.6.1 Magnitude of Change on LRs (DP1, 2, 3 and 4)

Note - For LRs where no impact is recorded, these are **not shown**.

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR 1	Channelised Water Course											
1.2	Shek Sheung River	DP1: San Tin Highway and Fanling Highway Kwu Tung Section	Study area: 5.7Ha/1.23km DP boundary 0.017ha / 12m	Small	Good	Good	Temporary (Short Term)	Permanent	Reversible	Irreversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The LR sits within the construction area of DP1 however there are no direct impacts to the watercourse. As a result, the compatibility during construction and operation is considered to be good. The overall magnitude of change for this LR is therefore considered to be negligible during both construction and operation.										
1.3	Sheung Yue River	DP1: San Tin Highway and Fanling Highway Kwu Tung Section DP2: Castle Peak Road Diversion DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement	Study area: 11.3ha/1.6km DP boundary 0.20ha / 25m	Small	Good	Good	Temporary (Short Term)	Permanent	Reversible	Irreversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The DPs will bridge Sheung Yue River at two locations. DP1 and 2 will jointly cross the river at the same location at the existing crossing point however; a new road bridge parallel to the existing will be constructed to accommodate the realigned / widened road. DP3 will cross the river on a second crossing further to the north. Both projects will require excavation and ground works to construct the abutments and bridge foundations which will disrupt small areas of existing established vegetation and ground levels beyond the upper edge of the riverbank. Taking into account the already significant engineering alterations, numerous precedents for bridges across the river channel, it is considered that the overall compatibility of the proposed DPs with the river landscape would be good in construction and operation. The overall construction footprint of the scheme is very small and will greatly reduce in operation. The overall magnitude of change for this LR is therefore considered to be negligible during both construction and operation.										
1.4	Water Course Network in Long Valley	DP1: San Tin Highway and Fanling Highway Kwu Tung Section DP2: Castle Peak Road Diversion DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement	Study area: 3.65km DP boundary 80m	Small	Fair	Good	Temporary (Short Term)	Permanent	Reversible	Irreversible	Negligible	Negligible
		This network of watercourse in the Long Valley will be partially affected by the construction of DP1 and DP2 where the widening and realignment works will extend upon existing culverted channel at the junction of Castle Peak Road and Kwu Tung Road. Construction works for DP3 will pass over this watercourse which will require culverting. As this watercourse presently comprises mainly vertically-sided concrete channels, the condition post construction is relatively similar to the existing treatment. As a result the compatibility during construction is considered to be fair and good in operation. Given the small scale nature of the DP works and existing channelised condition, the magnitude of change is considered to be negligible during the construction and operational stages.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR 2	Water Course											
2.1	Natural Streams in Kwu Tung	DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement DP4: KTN NDA Road D1 to D5	Study Area: 3830m DP Boundary: 202.4	Small	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> During construction this LR will be impacted by site formation works such as culverting, diversion (permanent & temporary), filling and vegetation removal predominantly as a result of the wider Schedule 3 development. Where retained the streams would remain in culvert beneath road crossing points. As many of these resources will be lost / disrupted, the compatibility during construction and operation is considered to be poor. The overall loss/ interference with these LRs as a result of the road construction is relatively small in comparison to the wider Schedule 3 development. As a result of the overall incompatibility of the DP roads with the LR, the overall magnitude of change is considered to be intermediate during construction and operation.										
KLR 3	Water Pond											
3.1	Ho Sheung Heung Water Ponds	DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement	Study area: 1.21ha DP boundary 0.25ha	Small	Fair	Fair	Permanent	Permanent	Irreversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> One of the large ponds to the south of Ho Sheung Heung will be impacted by roundabout construction forming part of road P2. Complete filling of the pond will be required during construction in order to form the road foundation, pedestrian footpaths, embankments and external realm space however the majority of these activities will fall under the Schedule 3 works. As a result of the small scale of the works and limited impact as a result of the Schedule 2 packages, it is considered the overall compatibility would be fair during construction and operation. Taking into account that most ponds within this LR will be retained and the limited extent affected by the DP, the magnitude of change is considered to be small in construction and operation.										
3.3	Fung Kong Shan Water Ponds	DP4: KTN NDA Road D1 to D5	Study area: 1.12ha DP boundary: 0.08ha	Small	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> The largest of the ponds within this LR would be impacted by road construction associated with DP 4. Construction works would require partial filling and dewatering of the pond and vegetation clearance would be required. The overall impact of the DP on this resources is limited however, the wider Schedule 3 scheme will require the filling and permanent loss of all of these ponds. The compatibility of the construction and operation works is therefore considered to be poor as a result of the direct loss. Only a relatively small area of one pond would be impacted by the DP therefore, the magnitude of change is considered to be small during construction and operation.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
3.6	Water Ponds at Pak Shek Au	DP2: Castle Peak Road Diversion	Study area: 0.23ha DP boundary: 0.05ha	Small	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> The ponds will be impacted by construction of the proposed DP and would require complete filling and vegetation clearance leading to complete loss of the resource. Due to these losses the compatibility of the DP is considered to be poor during construction and operation. The pond area is very small within and area bordered by industrial land and abandoned farmland therefore the magnitude of change is considered to be small in construction and operation.										
KLR 5	Plantation											
5.1	Plantation South of Fanling Highway	DP1: San Tin Highway and Fanling Highway Kwu Tung Section	Study area: 6ha DP boundary: 0.56ha	Small	Poor	Poor	Permanent	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> As a result if the realignment of the Kwu Tung Road which will shift the current alignment and overpass further to the west, tree felling of existing plantation trees on the roadside embankments will be required. As this road is also elevated, extensive embankment works will be required on either side of the road. As a result of the loss of mature and dense surrounding planting, the compatibility during construction and operation is considered to be poor. As a result of the extensive earthworks and overpass construction, the magnitude of change is considered to be intermediate during construction and operation.										
5.2	Plantation in the Vicinity of Hak Ka Wai	DP1: San Tin Highway and Fanling Highway Kwu Tung Section	Study area: 10.62ha DP boundary: 0.17ha	Small	Poor	Poor	Permanent	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> Minor realignment of the access road to the north of the Fanling highway will encroach onto this plantation area. Tree felling to allow space for construction works will occur. As a result of the loss if mature trees, the compatibility in construction and operation is considered to be poor. As only a very limited area will be affected, the magnitude of change is considered to be small during both construction and operation.										
5.4	Old and Valuable Trees (OVT) Castle Peak Road	DP1: San Tin Highway and Fanling Highway Kwu Tung Section	0.05ha (crown spread of 5no. trees)	Small	Fair	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		<u>Description of Key Impacts during Construction and Operation</u> Whilst these trees will be retained within the scheme, construction works to form the widened section of the San Tin and Fanling Highway Kwu Tung Section will occur directly around the tree trunks to form a planted central reservation. The trees currently grow directly out of the paved area (asphalt) on the boundary of Castle Peak Road and Fanling Highway, surface removal and excavation works will be required. They will also be in the center of a major construction site for an extended period and would be prone to damage. In this case the compatibility of the DP with the trees in construction is considered to be poor. In operation a wide central median area will be provided around the tree which is a significant improvement to their current situation therefore the compatibility in operation is considered to be good. Protection of these trees (including their rootzone) during the construction stage is fundamental to the preservation of this resource. As the trees will not be directly affected and works will occur around trees, the magnitude of change in construction and operation is considered to be small.										
KLR 6	Hillside Woodland											
6.1	Ki Lun Shan Hillside Woodland	DP1: San Tin Highway and Fanling Highway Kwu Tung Section	Study area: 29.8ha DP boundary: 0.75ha	Small	Poor	Poor	Temporary Medium Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> Tree felling and slope profiling works will occur to the south of the Fanling Highway in order to construct the junction, roundabout and slip roads connecting to the Pak Shek Au Interchange. As a result of the direct loss of the trees and slope cutting works required, the compatibility during construction and operation is considered to be poor. As a result of the relatively small scale and extent of the work entering into this natural area, the magnitude of change is considered to be intermediate for both construction and operation.										
6.3	Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong	DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement DP4: KTN NDA Road D1 to D5	Study area: 53.4ha DP Boundary: 1.5ha	Small	Poor	Poor	Temporary Medium Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> The construction of road P1 to the west would pass through this LR. Felling and vegetation clearance would be required throughout the construction corridor; in addition to earthworks affecting the natural topography would be required to achieve the vertical alignment of the road. As a result of the extent of felling that would be required and impact on topography, the overall compatibility during construction and operation is considered to be poor. Whilst the overall area affected is relatively small, the works would intrude directly into this natural area affecting not only natural vegetation but also areas of natural topography, in balance the overall magnitude of change is considered to be intermediate in construction and operation.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR 7	Lowland Woodland											
7.3	Lowland Woodland in Pak Shek Au and Tong Kok	DP1: San Tin Highway and Fanling Highway Kwu Tung Section DP2: Castle Peak Road Diversion DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement DP4: KTN NDA Road D1 to D5	Study area: 13.63ha DP boundary: 0.76ha	small	Poor	Poor	Temporary Medium Term	Permanent	Irreversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> The DPs will pass through several patches of this LR to Pak Shek Au. Construction works will require felling and vegetation clearance throughout the construction corridor. Earthworks will also be required to achieve the correct levels. The DPs would require permanent loss of part of this LR therefore the compatibility during construction and operation is considered to be poor. Taking into account that the overall area affected is relatively small, the magnitude of change is considered to be intermediate in construction and operation.										
KLR 8	Shrubland/ Grassland Mosaic											
8.2	Fung Kong Shan Shrubland/ Grassland Mosaic	DP4: KTN NDA Road D1 to D5	Study area: 10ha DP boundary: 0.2ha	Small	Poor	Poor	Temporary Medium Term	Permanent	Reversible	Irreversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> Part of DP 4 will pass through this LR at the western extent of the northern knoll of Fung Kong Shan and east of the southern knoll of Fung Kong Shan. Construction works will require minor vegetation clearance, soil stripping and excavation throughout the construction corridor. Earthworks will be required to achieve the correct levels. As the existing vegetation throughout this area will be permanently lost, the compatibility during construction and operation is considered to be poor. The extent of the development area is very small in comparison to the wider LR throughout the area. In this case the magnitude of change is considered to be negligible during construction and operation.										
8.3	Shrubland/ Grassland Mosaic in Tai Shek Mo and the Western Range Foothills	DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement	Study area: 76.5ha DP boundary: 0.04ha	Small	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> Part of DP 3 will be constructed on this LR at the base of the Western Ranges. Construction works will require vegetation clearance, soil stripping and excavation throughout the construction corridor. Cut and fill works will be required to achieve the correct levels. The area affected by the works is very small and will not influence the integrity of the wider resource, therefore the compatibility would be fair in construction and operation. The extent of the development area is very small in relation to the wider LR throughout the area. In this case the magnitude of change is considered to be negligible during construction and operation.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR 9	Agricultural Land											
9.1	Long Valley Agricultural Land	DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement	Study area: 23.5ha DP boundary 0.34ha	Small	Poor	Poor	Temporary MediumTerm	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> Before crossing Sheung Yue River entering KTN NDA, the DP cuts through a small section of this LR to the south of Long Valley. Construction will involve vegetation clearance, soil stripping and earthworks leading to a permanent loss of part of the LR in operation. In this case the compatibility is considered to be poor during construction and operation. Given the extent of the area is very small within a relative large area of this LR, the magnitude of change is considered to be small in construction and operation.										
9.3	Agricultural Lands in Shek Tsai Leng, Tong Kok and Tung Fong	DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement DP4: KTN NDA Road D1 to D5	Study area: 11.93ha DP boundary: 2.1ha	Small	Poor	Poor	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> Roads of DP3 and DP4 will pass through a series of agricultural plots which will impact this resource. Construction will involve vegetation clearance, soil stripping and earthworks leading to a permanent loss of part of the LR in operation. In this case the overall compatibility during construction and operation is considered to be poor. Given the scale of the LR which will be affected and the already fragmented nature of the land use in the immediate vicinity, during construction and operation the magnitude of change as a result of the DP works is considered to be small.										
9.4	Other Agricultural Lands in KTN	DP1: San Tin Highway and Fanling Highway Kwu Tung Section DP2: Castle Peak Road Diversion	Study area: 18.1ha DP boundary: 0.26ha	Small	Poor	Poor	Temporary Medium Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> Small areas of agricultural land will be impacted by the construction of these DPs. Road formation will involve vegetation clearance, soil stripping, cut and fill earthworks leading to a permanent loss of part of the LR in operation. As a result the compatibility of the DP during construction and operation is considered to be poor. Given the small extent of the area involved, the overall magnitude of change during construction and operation is considered to be small during both construction and operation.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR 10	Open Space/ Recreational Area											
10.2	Sheung Shui Community Sports	DP4: KTN NDA Road D1 to D5	Study area: 10.2ha DP boundary: 0.74ha	Small	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Intermediate	Small
		<u>Description of Key Impacts during Construction and Operation</u> A small area of this LR will be used for construction of the new roads. Construction impacts will result in demolition and removal of existing structures and hard surfaces. Some tree clearance and low level vegetation clearance will be required on the periphery of the site. Road formation will require predominantly fill works in this location. This area has been previously developed and ground levels altered for sports use including buildings and access roads. In this case the overall compatibility during construction and operation is considered to be fair. The majority of the impacts in relation to this LR will be as a result of the wider Schedule 3 work, whilst the Schedule 2 works will affect a much smaller area. As a result, in operation the magnitude of change would be intermediate due to the extent of demolition and filling requirement; this would reduce to small in operation given the previously developed nature of the is LR.										
KLR 12	Rural Development Area											
12.2	Rural Development Area in Long Valley, Yin Kong, Tsung Pak Long and Hak Ka Wai	DP1: San Tin Highway and Fanling Highway DP2: Castle Peak Road Diversion	Study area 26.9ha DP boundary 0.46	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> Realignment of the existing access road to accommodate the widening of the Fanling Highway and diversion of Castle Peak Road will encroach onto this LR although the existing condition is similar to the proposed works. Some patches of roadside vegetation will require removal. Fill works will be required to achieve the correct levels and the ground currently drops away in these locations. The ground in these areas has been previously disturbed by road construction, drainage works and small development therefore the compatibility is considered to be good in both construction and operation. Given the small scale of the LR affected, established function as a road and limited impact on vegetation, the magnitude of change during construction and operation is considered to be negligible.										
12.5	Rural Development Area to the North of Hong Kong Golf Club	DP1: San Tin Highway and Fanling Highway	Study area: 5.3ha DP boundary: 0.08ha	Small	Good	Good	Temporary Medium Term	Permanent	Reversible	Reversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> As a result of the DP1 widening works, existing pedestrian overpasses will need to be dismantled and replacement bridges constructed to accommodate the additional width. In this location the stairwell section of the overpass sits just inside the LR; the existing structure will be dismantled and replaced like for like. Given a bridge already exists here and will be replaced with an identical structure the overall compatibility during construction and operation is considered to be good. Magnitude of change would be negligible for both construction and operation.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
12.6	Kam Tsin Rural Development Area	DP1: San Tin Highway and Fanling Highway	Study area: 52.6ha DP boundary: 0.26ha	Small	Good	Good	Temporary Medium Term	Permanent	Reversible	Reversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The construction works for DP1 will encroach into this LR in two places. At Kwu Tung Road to the south of the Fanling Highway the LR will be changed as a result of the road realignment works. Further to the east, a small section of Kam Tsin Road will be upgraded with very minor modifications to the alignment. As in both cases the works are in relation to existing roads and the construction works will not change their form or function in the future, the compatibility in construction and operation is considered to be good. As a result of the very small areas involved and the established function of both areas as roads, the magnitude of change is considered to be negligible.										
12.9	Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang	DP1: San Tin Highway and Fanling Highway DP2: Castle Peak Road Diversion DP4: KTN NDA Road D1 to D5	Study area: 49.7ha DP boundary: 3.9ha	Medium	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> The proposed DPs will pass through this resource in several locations. Construction impacts will result in the demolition of structures and buildings, clearance of vegetation and trees. Cut and fill works will be required to achieve the correct road levels throughout the area. The roads will require partial loss of this resource therefore the compatibility is considered to be poor during both construction and operation. As a result of the relatively limited scale of the impacted area as a result of the Schedule 2 works, it is considered that the magnitude of change will be intermediate during construction. As these are previously developed areas, it is considered the magnitude of change would also be intermediate during the operation stage.										
KLR 13	Industrial/ Open Storage											
13.2	Industrial/ Open Storage Area in Yin Kong	DP1: San Tin Highway and Fanling Highway DP2: Castle Peak Road Diversion DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement	Study area: 5.6ha DP boundary: 0.65	Small	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> The proposed DPs will pass through this resource in several locations. Construction impacts will result in the demolition of structures and buildings, clearance of vegetation and trees. Earthworks will be required to achieve the correct road levels throughout the area. Given the current poor condition of this resource as a result of existing clearance of vegetation, extensive formation of hard or un-made surfaces and temporary structures, it is considered the compatibility of the roads during construction and operation would be fair. As a result of the overall small scale of the impacted area, it is considered that the magnitude of change will be small during construction and reduce to Small in operation.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
13.3	Industrial/ Open Storage in Shek Tsai Leng , Tong Kok and Fung Kong	DP1: San Tin Highway and Fanling Highway DP2: Castle Peak Road Diversion DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement DP4: KTN NDA Road D1 to D5	Study area: 35.3ha DP boundary 8.5ha	Medium	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Intermediate	Small
		<u>Description of Key Impacts during Construction and Operation</u> The proposed DPs will pass through this resource in several locations covering an extensive area. Construction impacts will result in the demolition of structures and buildings, clearance of vegetation and trees. Cut and fill works will be required to achieve the correct road levels throughout the area. Given the current poor condition of this resource as a result of extensive clearance, formation of hard surfaces and temporary structures, it is considered the compatibility of the roads during construction and operation would be fair. As a result of the overall medium scale of the impacted area, it is considered that the magnitude of change will be intermediate during construction, reducing to small in operation.										
13.4	Industrial/ Open Storage in Pak Shek Au, Chau Tau and Foothill of Ki Lun Shan	DP1: San Tin Highway and Fanling Highway DP2: Castle Peak Road Diversion DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement DP4: KTN NDA Road D1 to D5	Study area: 54.4ha DP boundary: 2.8ha	Small	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The proposed DPs will pass through this resource close to Pak Shek Au. Construction impacts will result in the demolition of structures and buildings, clearance of vegetation and trees. Cut and fill works will be required to achieve the correct road levels throughout the area. Given the existing vegetation, formation of hard and un-made surfaces and temporary structures in these areas, it is considered the compatibility of the roads during construction and operation would be fair. As a result of the overall small scale of the impacted area, it is considered that the magnitude of change will be small during construction reducing to negligible in operation.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR 14	Major Transportation Corridor											
14.1	Fanling Highway and nearby associated roads.	DP1: San Tin Highway and Fanling Highway DP2: Castle Peak Road Diversion DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement	Study Area 49ha / 5.1km DP Boundary 29ha / 4km	Large	Good	Good	Temporary Short term	Permanent	Reversible	Irreversible	Intermediate.	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> As a result of the Fanling Highway widening works, Castle Peak Road Diversion and construction of Kwu Tung Interchange, an extensive area of the highway will be within the works area. Existing plantation trees on both sides of the Fanling Highway and Castle Peak Road will require felling where the road will be realigned to the north, in addition to space required for pedestrian footbridge and external road connections/junction construction. Construction impacts will also be generated by dismantling of existing structures such as pedestrian bridges, barriers and breaking out of road/ hard surfaces. The majority of the works will involve the reconfiguration of the existing road alignment, drainage provision and reconstruction of highway structures (road barriers, noise barriers etc.) therefore the overall compatibility of the work is considered to be good during construction and operation. Taking into account the large scale of the construction footprint within the existing road corridor, it is considered that the magnitude of change during construction would be intermediate. As the works will form part of the existing highway corridor in the future, the magnitude of change during operation is considered to be negligible.										

Table 12A.6.2 Magnitude of Change on LCAs (DP1, 2, 3 and 4)

Note - For LCAs where no impact is recorded, these are **not shown**.

LCA Code	Name	Site No. (Land Use Type*) Impacting LCA	Area of LCA within study area and within DP boundary (ha)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLCA 1	Natural Hillside Landscape	This LCA is affected by: DP 1, DP 2 , DP 3 & DP 4	Study area: 168.9ha DP boundary: 1.3ha	Small	Poor	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> Road construction works will affect limited area of this LCA across the study area. Around Pak Shek Au, embankment and slope re-profiling works associated with DP1, DP2 and DP3 will affect the lower hillside slopes of Ki Lun Shan and the Western Ranges. Embankment works associated with DP4 will affect the lower slopes of Fung Kong Shan. In all cases, impacts are related to the loss of natural planting and alternations to topography which give this LCA its distinct character. Whilst the extent of the works is small, the works would result in a direct loss of the LR, as a result the compatibility is considered to be poor. Minor roads and engineered embankments are present in the locality of the affected area, in the case the compatibility during operation is considered to be fair. Given the small scale and isolated fragments of the affected areas, located on the fringes of the LCA, the magnitude of change is considered to be small in construction and operation.										
KLCA 2	Rural and Urban Peripheral Village Landscape	This LCA is affected by: DP 1, DP 2 , DP 3 & DP 4	Study area: 411.3ha DP boundary: 21.6ha	Small	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> Road construction works throughout this resource will require the demolition of buildings, structures, clearance of vegetation (including trees), breaking out hard surfaces, soil stripping and earthworks. In operation these areas will be replaced with a series of road systems including pedestrian crossing points, footpaths, drainage structures, noise barriers (various types). The road works will affect a large proportion of this character area, introducing more formalised roads into a less formally developed rural area, therefore the compatibility during construction and operation is considered to be Fair. As a result of the relatively small scale of the works within the wider LCA, the magnitude of change is considered to be intermediate in construction and operation.										
KLCA 4	Industrial Landscape	This LCA is affected by: DP 1, DP 2 , DP 3 & DP 4	Study Area: 98.5ha DP Boundary 11.95ha	Small	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> Road construction works throughout this resource will require the demolition of buildings, temporary structures, clearance of vegetation (including trees), breaking out hard surfaces, soil stripping and earthworks. In operation these areas will be replaced with a series of road systems including pedestrian crossing points, footpaths, drainage structures, noise barriers (various types). Given the current poor condition and low value of this LCA as a result of extensive clearance, formation of hard surfaces and temporary structures, it is considered the compatibility of the roads during construction and operation would be fair. These areas have been previously developed and significantly altered as a result of open storage functions, the proposed road works would introduce a slightly more formal urban character into this industrial area, in this case the magnitude of change is considered to be negligible in construction and operation.										

LCA Code	Name	Site No. (Land Use Type*) Impacting LCA	Area of LCA within study area and within DP boundary (ha)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLCA 5	Lowland Agricultural Landscape	This LCA is affected by: DP 1, DP 2 , DP 3 & DP 4	Study Area: 67.1ha DP Boundary: 2.44	Small	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> Construction works within the road corridor will require the stripping of soils, clearance of vegetation (including pockets of trees), filling of irrigation ditches and breaking out hard surfaces. Earthworks will also be required to form the correct road levels. In operation this area will be replaced with a series of road systems including pedestrian crossing points, footpaths, drainage structures, noise barriers (various types). These works will result in a small scale permanent loss of this character area therefore the compatibility during construction and operation is considered to be fair in construction and operation. As a result of the relatively small area affected by the introduction of this development, the magnitude of change during construction and operation is considered to be small.										
KLCA 6	Major Transportati on Corridor Landscape	This LCA is affected by: DP 1, DP 2 and DP 3.	Study area: 36.0ha DP Boundary: 29ha / 4km	Medium	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> As a result of the Fanling Highway widening works, Castle Peak Road Diversion and DP3 interchange works an extensive area this character area will be affected. Construction impacts will result in the demolition/ dismantling of existing structures such as pedestrian bridges, barriers and breaking out of surfaces. The majority of the works will involve the reconfiguration of the existing road alignment, drainage provision and highway structures (road barriers, noise barriers etc.) therefore the overall compatibility of the work is considered to be good during construction and operation. Taking into account the majority of the works sit within the existing LCA, it is considered that the magnitude of change during construction would be small during construction and operational stage. As the works will form part of the existing highway corridor in the future and the new road forms would assimilate well into the established character of the LCA.										
KLCA 7	Major Water Course Corridor Landscape	This LCA is affected by: DP 1, DP 2 , DP 3	Study Boundary: 5.2ha DP Boundary 0.28ha	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The DPs will bridge Sheung Yue River at two locations. DP1 and 2 will jointly cross the river at the same location at the existing crossing point however; a new road bridge parallel to the existing will be constructed to accommodate the realigned / widened road. DP3 will cross the river on a second crossing further to the north. Both projects will require excavation and ground works to construct the abutments and bridge foundations which will disrupt existing established vegetation and ground levels beyond the upper edge of the riverbanks. Taking into account the already significant engineering alterations and realignment to the existing channels and numerous precedents of other bridges crossings, it is considered that the overall compatibility of the proposed DPs with the river landscape would be good in construction and operation. The overall construction footprint of the scheme is very small and will reduce significantly in operation whereby the new development would quickly assimilate into the existing LCA. The overall magnitude of change for this LR is therefore considered to be negligible during construction and operation.										

12A.7 Summary of key landscape impacts

A summary of the key landscape impacts identified in **Tables 12A.6.1 and 12A.6.2** for each DP is provided below.

DP1: San Tin Highway and Fanling Highway Kwu Tung Section

The principal impacts as a result of the highway widening works will occur during the construction stage. The following LR/LCAs are affected:

- KLR 1.2 Shek Sheung River (within construction boundary, no impact)
- KLR 1.3 Sheung Yue River
- KLR 1.4 Water Course Network in Long Valley
- KLR 2.1 Streams in Kwu Tung
- KLR 5.1 Plantation South of Fanling Highway
- KLR 5.2 Plantation in the vicinity of Hak Ka Wai
- KLR 5.4 Old and Valuable Trees (OVT) Castle Peak Road
- KLR 6.1 Ki Lun Shan Hillside Woodland
- KLR 7.3 Lowland Woodland in Pak Shek Au and Tong Kok
- KLR 9.4 Other Agricultural Lands in KTN
- K12.2 Rural Development Area in Long Valley, Yin Kong, Tsung Pak Long and Hak Ka Wai
- K12.5 Rural Development Area to the North of Hong Kong Golf Club
- K12.6 Kam Tsin Rural Development Area
- KLR 12.9 Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang
- KLR13.2 Industrial/ Open Storage Area in Yin Kong
- KLR 13.3 Industrial/ Open Storage in Shek Tsai Leng, Tong Kok and Fung Kong
- KLR 13.4 Industrial/ Open Storage in Pak Shek Au, Chau Tau and Foothill of Ki Lun Shan
- KLR 14.1 Fanling Highway and nearby associated roads.
- KLCA 1 Natural Hillside Landscape
- KLCA 2 Rural and Urban Peripheral Village Landscape
- KLCA 4 Industrial landscape
- KLCA 5 Lowland Agricultural Landscape
- KLCA-6 Major Transportation Corridor Landscape
- KLCA 7 Major Water Course Corridor Landscape

It is predicted that most impacts will be generated in relation to loss of plantation KLR5.1 and 5.2, hillside woodland KLR6.1, lowland woodland KLR 7.3 and rural development areas KLR 12.2 and 12.9 where tree felling, demolition of buildings, clearance and cut and fill works will be required, resulting in permanent loss of the associated LR's area. The impacts within the industrial areas KLR13.2, 13.3 and 13.4 included within (KLCA 4) are considered minimal due to the existing disturbed nature of the landscape resource. The majority of the works for DP1 will take place within the highway corridor where the construction works, and ultimately the operational widened highway and associated structures are considered to have a good compatibility with the receiving LR and LCA. All other LR's and LCA will only experience very small scale impacts in relation to the development.

DP2: Castle Peak Road Diversion

The principal impacts as a result of the diversion works will occur during the construction stage. The following landscape resources are affected:

- KLR 1.3 Sheung Yue River
- KLR 1.4 Water Course Network in Long Valley
- KLR 3.6 Water Ponds at Pak Shek Au
- KLR 7.3 Lowland Woodland in Pak Shek Au and Tong Kok
- KLR 9.4 Other Agricultural Lands in KTN
- KLR 12.2 Rural Development Area in Long Valley, Yin Kong, Tsung Pak Long and Hak Ka Wai
- KLR 12.9 Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang
-
- KLR13.2 Industrial/ Open Storage Area in Yin Kong
- KLR 13.3 Industrial/ Open Storage in Shek Tsai Leng, Tong Kok and Fung Kong
- KLR 13.4 Industrial/ Open Storage in Pak Shek Au, Chau Tau and Foothill of Ki Lun Shan
- LR 14.1 Fanling Highway and nearby associated roads.
- KLCA 1 Natural Hillside Landscape
- KLCA 2 Rural and Urban Peripheral Village Landscape
- KLCA 4 Industrial landscape
- KLCA 5 Lowland Agricultural Landscape
- KLCA-6 Major Transportation Corridor Landscape
- KLCA 7 Major Water Course Corridor Landscape

As the diverted road will be pushed further north into land uses which have established along the roads existing alignment, numerous LRs are affected albeit in small proportions. It is considered the most impacts will be generated in relation to KLR 2.1, 3.6, 7.3, 9.4 and 12.9 where demolition, tree felling, clearance and cut and fill works will be required resulting in permanent loss of the associated LRs area. The impacts within the industrial areas KLR13.2, 13.3 and 13.4 are considered minimal due to the existing disturbed nature of the landscape resource.

DP3: KTN NDA Road P1 and P2 and associated new Kwu Tung Interchange and Pak Shek Au Interchange Improvement

The principal impacts as a result of the road P1, P2 and associated interchange works will occur during the construction and operational stages. The following LRs/LCAs are affected:

- KLR 1.3 Sheung Yue River
- KLR 1.4 Water Course Network in Long Valley
- KLR 2.1 Streams in Kwu Tung
- KLR 3.1 Ho Sheung Heung Water Ponds
- KLR 6.3 Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong
- KLR 7.3 Lowland Woodland in Pak Shek Au
- KLR 8.3 Shrubland/ Grassland Mosaic in Tai Shek Mo and the Western Range Foothills
- KLR 9.1 Long valley agricultural land
- KLR 9.3 Agricultural Lands in Shek Tsai Leng, Tong Kok and Tung Fong
- KLR 13.2 Industrial/ Open Storage Area in Yin Kong
- KLR 13.3 Industrial/ Open Storage in Shek Tsai Leng, Tong Kok and Fung Kong
- KLR 13.4 Industrial/ Open Storage in Pak Shek Au, Chau Tau and Foothill of Ki Lun Shan
- KLR 14.1 Fanling Highway and nearby associated roads
- KLC 1 Natural Hillside Landscape
- KLCA 2 Rural and Urban Peripheral Village Landscape
- KLCA 4 Industrial landscape
- KLCA 5 Lowland Agricultural Landscape
- KLCA-6 Major Transportation Corridor Landscape
- KLCA 7 Major Water Course Corridor Landscape

It is considered the most impacts will be generated in relation to KLR 2.1, 3.1, 6.3, 7.3, 9.1 and 9.3 where pond/stream filling, tree felling, vegetation

clearance and cut and fill works will be required resulting in permanent loss of the associated LR's area. Whilst the scale of the areas is not vast, the works will reduce and further fragment the extent of these LR's within the vicinity.

DP4: KTN NDA Road D1 to D5

The principal impacts as a result of the road D1 to D5 and associated interchange works will occur during the construction and operational stages. The following LR's/LCAs are affected:

- KLR 2.1 Streams in Kwu Tung
- KLR 3.3 Fung Kong Shan Water Ponds
- KLR 6.3 Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong
- KLR 7.3 Lowland Woodland in Pak Shek Au and Tong Kok
- KLR 8.2 Fung Kong Shan Shrubland/ Grassland Mosaic
- KLR 9.3 Agricultural Lands in Shek Tsai Leng, Tong Kok and Tung Fong
- KLR 10.2 Sheung Shui Community Sports
- KLR 12.9 Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang
- KLR 13.3 Industrial Open Storage in Shek Tsai Leng, Tong Kok and Fung Kong
- KLR 13.4 Industrial/ Open Storage in Pak Shek Au, Chau Tau and Foothill of Ki Lun Shan
- KLCA 1 Natural Hillside Landscape
- KLCA 2 Rural and Urban Peripheral Village Landscape
- KLCA 4 Industrial landscape
- KLCA 5 Lowland Agricultural Landscape

It is predicted that most impacts will be generated in relation to KLR 2.1, 3.3, 6.3, 7.3 and 8.2 and 9.3 where pond/stream filling, stream diversion, construction of culverts, tree felling, vegetation clearance and cut and fill works will be required resulting in permanent loss of the associated LR's area. The impacts within the industrial areas KLR13.3 and 13.4 are considered minimal due to the existing disturbed nature of the landscape resource.

12A.8 Significance of landscape impacts before Mitigation

The potential significance of landscape impacts during the construction and operational phases, before mitigation, is provided in **Tables 12A.8.1** and **12A.8.2** below. The assessment follows the methodology proposed in **Section 12.18** and the matrix provided in **Table 12.18.1**.

Landscape Impacts are mapped on **Figures 12.52.20** and **12.52.24 to 31**.

Table 12A.8.1 Significance of landscape impacts on LRs (DP1, 2, 3 and 4)

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
KLR 1	Channelised Water Course					
1.2	Shek Sheung River	Med	Negligible	Negligible	Insignificant	Insignificant
1.3	Sheung Yue River	Med	Negligible	Negligible	Insignificant	Insignificant
1.4	Water Course Network in Long Valley	Med	Negligible	Negligible	Insignificant	Insignificant
KLR 2	Water Course					
2.1	Natural Streams in Kwu Tung	Med	Intermediate	Intermediate	Moderate	Moderate
KLR 3	Water Pond					
3.1	Ho Sheung Heung Water Ponds	High	Small	Small	Moderate	Moderate
3.3	Fung Kong Shan Water Ponds	Med	Small	Small	Slight	Slight
3.6	Water Ponds at Pak Shek Au	Med	Small	Small	Slight	Slight
KLR 5	Plantation					
5.1	Plantation South of Fanling Highway	Med	Intermediate	Intermediate	Moderate	Moderate
5.2	Plantation in the Vicinity of Hak Ka Wai	Med	Small	Small	Slight	Slight
5.4	Old and Valuable Trees (OVT) Castle Peak Road	High	Small	Small	Moderate	Moderate
KLR 6	Hillside Woodland					
6.1	Ki Lun Shan Hillside Woodland	High	Intermediate	Intermediate	Moderate	Moderate

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
6.3	Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong	High	Intermediate	Intermediate	Moderate	Moderate
KLR 7	Lowland Woodland					
7.3	Lowland Woodland in Pak Shek Au and Tong Kok	High	Intermediate	Intermediate	Moderate	Moderate
KLR 8	Shrubland/ Grassland Mosaic					
8.2	Fung Kong Shan Shrubland/ Grassland Mosaic	Med	Negligible	Negligible	Insignificant	Insignificant
8.3	Shrubland/ Grassland Mosaic in Tai Shek Mo and the Western Range Foothills	Med	Negligible	Negligible	Insignificant	Insignificant
KLR 9	Agricultural Land					
9.1	Long Valley Agricultural Land	High	Small	Small	Moderate	Moderate
9.3	Agricultural Lands in Shek Tsai Leng, Tong Kok and Tung Fong	Med	Small	Small	Slight	Slight
9.4	Other Agricultural Lands in KTN	Med	Small	Small	Slight	Slight
KLR 10	Open Space / Recreational Area					
10.2	Sheung Shui Community Sports	Med	Intermediate	Small	Moderate	Slight

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
KLR 12	Rural Development Area					
12.2	Rural Development Area in Long Valley, Yin Kong, Tsung Pak Long and Hak Ka Wai	High	Negligible	Negligible	Insignificant	Insignificant
12.5	Rural Development Area to the North of Hong Kong Golf Club	Low	Negligible	Negligible	Insignificant	Insignificant
12.6	Kam Tsin Rural Development Area	Med	Negligible	Negligible	Insignificant	Insignificant
12.9	Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang	Med	Intermediate	Intermediate	Moderate	Moderate
KLR 13	Industrial/ Open Storage					
13.2	Industrial/ Open Storage Area in Yin Kong	Low	Small	Negligible	Slight	Slight
13.3	Industrial/ Open Storage in Shek Tsai Leng , Tong Kok and Fung Kong	Low	Intermediate	Small	Slight	Slight
13.4	Industrial/ Open Storage in Pak Shek Au, Chau Tau and Foothill of Ki Lun Shan	Low	Small	Negligible	Slight	Insignificant

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
KLR 14	Major Transportation Corridor					
14.1	Fanling Highway and nearby associated roads.	Med	Intermediate	Negligible	Moderate	Insignificant

In summary for LRs, moderate adverse impacts are predicted at the construction and operational stage for KLR 6.1 Ki Lun Shan Hillside Woodland and 6.3 Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong due to felling and localised earthworks for road formation.

Additionally KLR 2.1 Streams in Kwu Tung, 3.1 Ho Sheung Heung Water Ponds, 5.1 Plantation South of Fanling Highway, 7.3 Lowland Woodland in Pak Shek Au and Tong Kok, 10.2 Sheung Shui Community Sports, 12.9 Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang, 14.1 Fanling Highway and nearby associated roads are predicted to experience moderate adverse impacts during construction. It is anticipated in the case of KLR 10.2 and 14.1 that this would reduce to slight adverse and insignificant respectively in operation due to the previously developed nature of these sites; for the rest the level of impact would remain constant during operation prior to mitigation.

Moderate adverse impacts at construction prior to mitigation are also predicted in relation to KLR 5.4 Old and Valuable Trees (OVT) Castle Peak Road due to their high sensitivity and location within the centre of the proposed DP1 and 2 works area. KLR9.1 Long Valley Agricultural Land would also experience moderate adverse impacts due to the high sensitivity and quality of this resource albeit in a very small area.

The remaining LRs will all experience a slight or insignificant impact at the construction and operational stage.

Table 12A.8.2 Significance of Impacts on LCAs (DP1, 2, 3 and 4)

LCA Code	Name	LCA Sensitivity (High/ Medium/ Low)	Magnitude of Impact (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
KLCA 1	Natural Hillside Landscape	High	Small	Small	Moderate	Moderate
KLCA 2	Rural and Urban Peripheral Village Landscape	Medium	Intermediate	Intermediate	Moderate	Moderate
KLCA 4	Industrial Landscape	Low	Negligible	Negligible	Insignificant	Insignificant
KLCA 5	Lowland Agricultural Landscape	High	Small	Small	Moderate	Moderate
KLCA 6	Major Transportation Corridor Landscape	Medium	Small	Small	Slight	Slight
KLCA 7	Major Water Course Corridor Landscape	Medium	Negligible	Negligible	Insignificant	Insignificant

In summary for the LCAs, moderate adverse impacts are predicted during the construction and operational stage in relation to KLCA 1 Natural Hillside Landscape and KLCA 5 Lowland Agricultural Landscape due to the intrusion of the proposed work within these areas of high sensitivity and minimal development.

Moderate adverse impacts will be experienced by KLCA 2 Rural and Urban Peripheral Village Landscape due to relatively large extent of land affected. In this case the previously developed nature of this LCA means the proposed works would have a better compatibility.

KLCA 4 Industrial landscape would experience negligible impacts due to the degraded nature of this landscape. Whilst it is considered that removal of the industrial functions within the landscape would be a positive measure in terms of improving the quality of this LCA, the road development would be relatively neutral in terms of its influence on character. In conjunction with the wider Schedule 3 developments slight beneficial impacts are predicted.

Impacts in relation to KLCA 6 Major Transportation Corridor Landscape would be slight adverse in the construction stage due to the very large site area that

would be affected, in operation the majority of the works sit within the existing highway corridor and would be directly compatible with the established LCA.

KLCA 7 Major Water Course Corridor Landscape would experience insignificant impacts as the works affect a very small area and involve structures, in this case bridges, which are already present in the LCA.

12A.9 Landscape and Visual Mitigation Measures for Construction and Operation

The proposed mitigation measures for the Project are described in the following section and summarised in **Table 12A.9.1** below. The same table also lists the agents responsible for the capital funding, the implementation and the maintenance of the suggested measures.

At the Project planning stage, many factors have been considered to avoid, reduce and/ or help compensate for the potential L&V impacts of the DPs, with highest priority given to avoidance of impacts. Several alternative layouts/profiles for the Projects have been investigated, taking into account potential L&V impacts, geotechnical constraints, existing settlements and infrastructure, as well as other environmental factors such as cultural heritage, water and noise.

Measures to further avoid, as well as reduce and/or compensate for particular unavoidable impacts during the construction and/or operation of the Project have all been considered, with highest priority given to impact avoidance and reduction.

These proposed mitigation measures should be implemented as early as possible but those listed here have not been categorised separately as 'design', 'construction' or 'operation' due to measures often spanning different phases of the Project. For example soft landscape mitigation measures will be considered during detailed design, most likely be implemented during construction, and their full effect often not appreciated until after 10 years of operation. Equally, detailed design measures such as fine tuning the footprint and design of a road alignment may reduce construction impacts but will also reduce operation impacts.

The proposed mitigation measures for DP Package A (DP1, 2, 3 and 4) are summarised in **Table 12A.9.1** below and described in detail following.

Table 12A.9.1 – Summary of Proposed Mitigation Measures

Mitigation Measure Code	Summary Description	Capital Funding Agency ⁽¹⁾	Implementation Agency	Post-Construction Maintenance Agency ⁽²⁾
MM1	Minimum Topographical Change	Government	Contractors of the Government	n/a
MM2	Detailed Design – Visual	Government	Contractors of the Government	HyD
MM3	Open Space Provision	Government	Contractors of the Government	LCSD
MM4	Tree Protection & Preservation	Government	Contractors of the Government	n/a
MM5	Tree Transplantation	Government	Contractors of the Government	HyD/ LCSD
MM6	Slope Landscaping	Government	Contractors of the Government	HyD/ LCSD
MM7	Compensatory Planting	Government	Contractors of the Government	HyD/ LCSD
MM8	Woodland Compensatory Planting	Government	Contractors of the Government	AFCD ⁽³⁾
MM9	Vertical Greening	Government	Contractors of the Government	HyD/ LCSD
MM11	Screen Planting	Government	Contractors of the Government	HyD/ LCSD
MM12	Road Greening	Government	Contractors of the Government	HyD/ LCSD
MM13	Marsh/Wetland Compensation	Government	Contractors of the Government	AFCD
MM14.3	Watercourse Impact Mitigation – Enhancement Planting along Embankment	Government	Contractors of the Government	DSD/LCSD/AFCD
MM14.4	Watercourse Impact Mitigation – Avoid Affecting Watercourses	Government	Contractors of the Government	DSD/LCSD/AFCD

⁽¹⁾ CEDD/ other government departments will be responsible for funding except where sites are tendered out to private investors, when these investors will be responsible for the funding.

⁽²⁾ The Contractor will be responsible for landscaping during the agreed establishment and maintenance period. Other designated maintenance agents to take up maintenance of landscaping after end of agreed period.

⁽³⁾ AFCD are suggested as the management department for specific woodland compensatory planting as detailed in Chapter 13 of the EIA Report.

Mitigation Measure Code	Summary Description	Capital Funding Agency ⁽¹⁾	Implementation Agency	Post-Construction Maintenance Agency ⁽²⁾
MM15	Pond Replacement	Government	Contractors of the Government	LCSD
MM16	Screen Hoarding	Government	Contractors of the Government	n/a
MM17	Light Control	Government/ Private Sector	Contractors of the Government	n/a

Minimising Topographical Change (MM1)

To minimise landscape and visual impacts, the vertical and horizontal alignment of the at-grade road construction works should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain. Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimise landform changes and land resumption, whilst also considering visual amenity. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with the surrounding landscape and to mimic the natural contouring and terrain e.g. introduction and continuation of natural features such as spurs and ridges where appropriate to support landscape and visual assimilation with the surrounding terrain.

This MM has been recommended for natural streams in Kwu Tung (KLR-2.1) where construction of DP3 and 4 would affect the natural land form.

In addition, it is also recommended where works would impact on areas of hillside woodland (KLR 6.3) in Ma Tso Lung, Tit Hang and Fung Kong as these areas contain undulating natural topography.

Detailed Design (Visual) (MM2)

The construction and operational footprint of the road infrastructure components should be kept to a practical minimum. The form, textures, finishes and colours of the proposed road structures such as viaducts, footbridges and noise barriers should aim to be compatible with the existing surroundings. The engineering design should be refined to reduce visual bulkiness and incorporate aesthetically pleasing surface treatments to promote visual amenity. For example, textured finishes for concrete surfaces to assist in breaking up uniform surface treatments on parapet structures should be considered. In addition light earthy tone colours such as shades of green, shades of grey, shades of brown and off-white should also be considered to reduce the visibility of the development components.

All barriers, particularly noise barriers but also any barriers proposed for ecological impact mitigation, should be kept to a practical minimum, be designed to integrate as well as possible into the surrounding visual context and be as low as practical to minimise blocking views. Noise barrier design, including vertical, cantilever or curved, and noise enclosures including semi-

enclosure and full enclosure, at grade and/ or elevated, should follow the Greening, Landscape and Tree Management Section (GLTM) of the Development Bureau's *Guidelines on Greening of Noise Barriers (April 2012)*.

Construction time frame should also be considered and designs seek to keep it to a practical minimum.

MM3 – Open Space Provision

In planning the revised RODP, impacts to most open space/ recreational areas have been avoided. To help alleviate loss of open space unavoidably affected by the Project, the principles adopted in the RODP planning ensure that public open space systems are incorporated and also improve landscape and visual amenity. In KTN NDA, the key open spaces are the east-west running Town Park in the town centre and the Fung Kong Shan Park in the northern part of the NDA as well as a riverside promenade along the western side of Sheung Yue River. The public open space within the RODPs will enhance the visual amenity of the area and improve the overall landscape character as well as ensuring no overall loss of open space/ recreational LR.

Tree Protection & Preservation (MM4)

Exiting trees to be retained within the Project Site should be carefully protected during construction. In particular OVTs will be preserved according to ETWB Technical Circular (Works) No. 29/2004. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas.

A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.

Tree Transplantation (MM5)

Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible.

A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 and final locations of transplanted trees should be agreed prior to commencement of the work.

For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be referred to.

Slope Landscaping (MM6)

Site formation has been reduced as far as possible to avoid substantial slope cutting (also see MM1).

Hydroseeding of modified slopes should be done as soon as grading works are completed to prevent erosion and subsequent loss of landscape resources and characters. Woodland tree seedlings and/ or shrubs should be planted where the slope gradient and site conditions allow. In addition, landscape planting should be provided for the retaining structures associated with modified slopes, where conditions allow. All slope landscaping works should comply with GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes.

Compensatory Planting (MM7)

Compensatory tree planting for all felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Removal Application process under ETWBTC 3/2006. Compensatory planting is proposed at the potential open areas such as open spaces, amenity areas, open areas of the streetscapes, as well as the open areas within development lots.

The location of compensatory planting for DP Package A also includes the roadside areas, street tree planting, central medians (within the centre of the Fanling Highway) and any soft landscape areas affected by the works area. Should space allow, the compensatory planting areas (see MM8) may also be able to accommodate some standard tree and shrub compensation.

Compensatory planting for shrub cover should be considered in suitable locations including native species such as *Melastoma malabathricum*, *Diospyros vaccinioides*, *Gardenia jasminoides*, *Ixora chinensis*, *Ligustrum sinense*, *Litsea rotundifolia*, *Melastoma dodecandrum*, *Atalantia buxifolia*, *Rhodomyrtus tomentosa*, *Rhaphiolepis indica*, and *Rhododendron simsii*.

Woodland Compensatory Planting (MM8)

Specific Woodland compensatory planting is proposed for any areas of woodland that are unavoidably affected. The location and design of the woodland compensatory planting will principally be within habitats of lower value such as upland grassland. These have been considered both within the NDAs.

The proposed locations are identified, for example, on the foothills of Tai Shek Mo and on Fung Kong Shan in KTN NDA, along Fanling Bypass and a small area in the northern FLN NDA

The total area allocated for compensatory woodland planting is more than 16 ha. This provision allows in part for the fact that it will take some time for the compensatory planting to achieve the landscape and ecological function and value of the area to be lost. In addition, it allows for the fact that not all of the areas identified for planting will prove to be plantable, by virtue of topography

and ground conditions and, especially, because though the areas identified are largely grassland it is inevitable that these areas will already support some patches of trees and shrubs which would be inappropriate for further planting.

The intention of the compensatory woodland will be to recreate areas of quality woodland, not necessarily to compensate for loss of trees on a like for like basis. Native tree species are suggested for planting, including *Ailanthus fordii*, *Bischofia javanica*, *Castanopsis fissa*, *Celtis sinensis*, *Cinnamomum burmannii*, *Cinnamomum camphora*, *Xanthoxylum avicennae*, *Liquidambar formosana*, *Sapium discolor*, *Schefflera heptaphylla* and *Ilex rotunda*. In addition some understory vegetation may be planted including shrubs such as *Atalantia buxifolia*, *Diospyros vaccinioides*, *Gardenia jasminoides*, *Ixora chinensis*, *Ligustrum sinense*, *Litsea rotundifolia*, *Melastoma malabathricum*, *Melastoma dodecandrum*, *Rhodomyrtus tomentosa*, *Rhaphiolepis indica*, and *Rhododendron simsii*.

Vertical Greening (MM9)

Where space and appropriate planting conditions allow (i.e. where suitable depth of planting medium is possible, maintenance access available and enough light penetration to ground level), climbing plants should be considered to grow up vertical surfaces such as viaduct piers or noise barriers. The planting once established will assist in breaking up the appearance of uniform engineered structures and surfaces.

Screen Planting (MM11)

Tall screen/buffer trees and shrubs should be planted to assist in screening proposed road corridors and associated above ground structures such as elevated road sections and engineered embankments. This measure may additionally form part of the compensatory planting and will improve compatibility with the surrounding environment and create a pleasant pedestrian environment.

Road Greening (MM12)

For viaducts, soft landscaping should be provided to soften the hard, straight edges (for climbers used to cover the vertical, hard surfaces of the piers – see MM9 Vertical Greening) and shade tolerant plants should be planted, where light is insufficient, to improve aesthetic value of areas under viaducts. Both at grade and use of planters should be considered for the soft landscaping of viaducts, taking into account the preference to minimise the overall viaduct bulk and integrate architectural forms and textural finishes which improve aesthetics.

At-grade road planting should be considered along central dividers and on road islands e.g. in the middle of roundabouts. (Roadside planting i.e. at the road edge and not in the central divider or road island, is considered part of MM11 Screen Planting). HQ/GN/15 - Guidelines for Greening Works along Highways should be referred to for greening of highways specifically and Development Bureau TCW No. 2/2013 – Greening on Footbridges and Flyovers for footbridges and flyovers.

Marsh/Wetland Compensation (MM13)

Direct loss of marsh and wetland areas caused by the DPs will be mitigated by compensatory habitat and management in the proposed Long Valley Nature Park (LVNP) where there will be some addition of wetland areas.

Also see 'MM14 Watercourse Impact Mitigation' as wetland planting should be provided along the embankments and beds of modified watercourses as far as practicable.

Watercourse Impact Mitigation (MM14)

Enhancement Planting along Embankment MM14.3

The proposed DPs do not require channelised watercourses to be modified however DP 1, 2 and 3 all require new crossing points to be constructed over the Sheung Yue River. Where construction works for these new structures interface with the existing channels, such as the abutments, measures to avoid altering the channel should be adopted. Where minor construction works are required the Drainage Services Department Practice Note No.1/2005 – Guidelines on Environmental Considerations for River Channel Design, should be considered and appropriate mitigation measures included ensuring the new watercourses match the existing condition as far as possible. Measures can include enhancement planting to upgrade the channels as appropriate, including new planting where appropriate; as well as consideration of the best materials for the channel lining (e.g. gabion). All measures must also ensure any necessary maintenance work can be carried out and that the channel meets all its requirements for water flow.

Avoidance Affecting Watercourses (MM14.4)

At the planning stage care has been taken to avoid affecting watercourses as far as possible. In the detailed design, consideration should again be made of watercourses, to minimise any impacts e.g. at new bridge crossings, viaducts, road alignment etc. Guidelines for this include ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/ivers from adverse impacts arising from construction works as well as Building Department (BD) Practice Note for Authorized Persons and Registered Structural Engineers 295: Protection of natural streams/ivers from adverse impacts arising from construction works.

In relation to Schedule 2 DPs, DP 1, 2 and 3 all require new crossing points to be constructed over the Sheung Yue River. The detailed final design of the crossing points should follow the above guidelines and ensure that no viaduct footings or other structures are placed in the river.

Pond Replacement (MM15)

In planning of the revised RODP (including Schedule 2 DPs), impacts to most ponds have been avoided by exclusion from the works area or provision of a suitable zoning that will allow for the ponds to be protected e.g. Agricultural zoning in C2-2 at the north of the proposed LVNP. To help compensate for ponds unavoidably affected by the Project, the principles adopted in the RODP

design ensure that new ponds are incorporated. For example the Fung Kong Shan Park in E1-7 of KTN NDA will incorporate a pond. In addition the LVNP will ensure the retention and possible provision of ponds as reported in MM13.

Screen Hoarding (MM16)

Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders with public accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used. Any works areas near the ecological sensitive areas should erect 2m high dull green site boundary fence. Details can refer to the ecological impact assessment (Chapter 13 of the EIA report).

Light Control (MM17)

Construction day and night time lighting should be controlled to minimise glare impact to adjacent VSRs during the construction stage. Shrouded or directional lighting should be considered where appropriate as a general good practice construction measure but especially where works are in close proximity to residential VSRs.

Other good practise measures.

For areas unavoidably disturbed by the Project on a short term basis e.g. works areas, the general principle to try and restore these to their former state to suit future land use, should be adhered to.

With regard to topsoil, where identified, it should be stripped, treated appropriately, and where suitable and practical stored for re-use in the construction of the soft landscape works such as roadside amenity strips, and open space sites. It is assumed that the topmost 100mm of soil surface will be topsoil material. This procedure will also minimise the requirement for off-site disposal and associated traffic movements.

For all planting, this should be installed as soon as the areas become available, to achieve early establishment.

12A.10 Significance of Residual Landscape Impacts upon Mitigation

The proposed landscape and visual mitigation measures, as described in **Section 12A.9**, have been applied to the various impacts and used to identify potential residual impacts.

The potential significance of residual landscape impacts during the construction and operational phases, before and after mitigation at day 1 and year 10, are provided in **Tables 12A.10.1** and **12A.10.2**. The tables assume that the appropriate mitigation measures have been applied and that the full effect of the soft landscape mitigation measures would be fully realised and established after 10 years.

Where insignificant impacts have been identified prior to mitigation, mitigation measures are still shown in the table as these would be applied as best practice in the construction and operational stages as part of a consistent design and construction approach.

Landscape mitigation measures are presented on **Figures 12.52.50 to 56.**

Table 12A.10.1 Residual Landscape Impact on Implementation of Mitigation Measures for LRs

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures (MM)		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
LR 1	Channelised Water Course							
1.2	Shek Sheung River	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
1.3	Sheung Yue River	Insignificant	Insignificant	4, 14.3, 14.4	6	Insignificant	Insignificant	Insignificant
1.4	Water Course Network in Long Valley	Insignificant	Insignificant	4, 14.3	6	Insignificant	Insignificant	Insignificant
KLR 2	Water Course							
2.1	Natural Streams in Kwu Tung	Moderate	Moderate	1,	n/a	Moderate	Slight	Slight
KLR 3	Water Pond							
3.1	Ho Sheung Heung Water Ponds	Moderate	Moderate	15	13	Slight	Slight	Insignificant
3.3	Fung Kong Shan Water Ponds	Slight	Slight	15	13	Slight	Insignificant	Insignificant
3.6	Water Ponds at Pak Shek Au	Slight	Slight	15	13	Slight	Insignificant	Insignificant
KLR 5	Plantation							
5.1	Plantation South of Fanling Highway	Moderate	Moderate	1, 4, 5	6, 7	Moderate	Moderate	Insignificant
5.2	Plantation in the Vicinity of Hak Ka Wai	Slight	Slight	1, 4, 5	6, 7	Slight	Insignificant	Insignificant
5.4	Old and Valuable trees (OVT) Castle Peak Road	Moderate	Moderate	4	4	Insignificant	Insignificant	Insignificant
KLR 6	Hillside Woodland							
6.1	Ki Lun Shan Hillside Woodland	Moderate	Moderate	1, 4, 5, 6, 8	4, 5, 8	Moderate	Moderate	Slight
6.3	Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong	Moderate	Moderate	1, 4, 5, 6, 8	4, 5, 8	Moderate	Moderate	Slight
KLR 7	Lowland Woodland							
7.3	Lowland Woodland in Pak Shek Au and Tong Kok	Moderate	Moderate	1, 4, 5, 6, 7, 8, 12	1, 4, 5, 7, 8, 12	Moderate	Moderate	Slight
KLR 8	Shrubland/ Grassland Mosaic							
8.2	Fung Kong Shan Shrubland/ Grassland Mosaic	Insignificant	Insignificant	1, 4, 5, 6, 7	1, 4, 5, 6, 7	Insignificant	Insignificant	Insignificant
8.3	Shrubland/ Grassland Mosaic in Tai Shek Mo and the Western Range Foothills	Insignificant	Insignificant	1, 4, 5, 6, 7	1, 4, 5, 6, 7	Insignificant	Insignificant	Insignificant

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures (MM)		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
KLR 9	Agricultural Land							
9.1	Long Valley Agricultural Land	Moderate	Moderate	4, 5, 7	4, 5, 7	Moderate	Moderate	Moderate
9.3	Agricultural Lands in Shek Tsai Leng, Tong Kok and Tung Fong	Slight	Slight	4, 5, 7	4, 5, 7	Slight	Slight	Insignificant
9.4	Other Agricultural Lands in KTN	Slight	Slight	4, 5, 7	4, 5, 7	Slight	Slight	Insignificant
KLR 10	Open Space/ Recreational Area							
10.2	Sheung Shui Community Sports	Moderate	Slight	3, 4, 5, 7	3, 4, 5, 6, 7	Moderate	Slight	Insignificant
KLR 12	Rural Development Area							
12.2	Rural Development Area in Long Valley, Yin Kong, Tsung Pak Long and Hak Ka Wai	Insignificant	Insignificant	4, 5, 7, 12	n/a	Insignificant	Insignificant	Insignificant
12.5	Rural Development Area to the North of Hong Kong Golf Club	Insignificant	Insignificant	4, 5, 7	n/a	Insignificant	Insignificant	Insignificant
12.6	Kam Tsin Rural Development Area	Insignificant	Insignificant	4, 5, 7	n/a	Insignificant	Insignificant	Insignificant
12.9	Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang	Moderate	Moderate	1, 4, 5, 7	1, 4, 5, 6, 7	Slight	Slight	Insignificant
KLR 13	Industrial/ Open Storage							
13.2	Industrial/ Open Storage Area in Yin Kong	Slight	Slight	4, 5, 7, 12	4, 5, 7, 12	Slight	Insignificant	Insignificant
13.3	Industrial/ Open Storage in Shek Tsai Leng, Tong Kok and Fung Kong	Slight	Slight	4, 5, 7, 12	4, 5, 7, 12	Slight	Insignificant	Insignificant
13.4	Industrial/ Open Storage in Pak Shek Au, Chau Tau and Foothill of Ki Lun Shan	Slight	Insignificant	4, 5, 7, 12	4, 5, 7, 12	Slight	Insignificant	Insignificant
KLR 14	Major Transportation Corridor							
14.1	Fanling Highway and nearby associated roads.	Moderate	Moderate	2, 4, 5, 7, 12, 14.5	2, 4, 5, 7, 12, 14.5	Slight	Slight	Insignificant

Table 12A.10.2 Residual Landscape Impact on Implementation of Mitigation Measures for LCAs

LCA Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
KLCA-1	Natural Hillside Landscape	Moderate	Moderate	1, 4, 5, 6, 7, 8, 12	1, 4, 5, 6, 7, 8, 12.	Slight	Insignificant	Insignificant
KLCA-2	Rural and Urban Peripheral Village Landscape	Slight	Slight	1, 2, 4, 5, 7, 6, 8, 11, 12	1, 2, 4, 5, 7, 6, 8, 11, 12	Slight	Slight	Insignificant
KLCA-4	Industrial Landscape	Insignificant	Insignificant	4, 5, 7, 11, 12	4, 5, 7, 11, 12	Insignificant	Insignificant	Slight beneficial
KLCA-5	Lowland Agricultural Landscape	Moderate	Moderate	4, 5, 7,11, 13, 15	4, 5, 7,11, 13, 15	Moderate	Moderate	Moderate
KLCA-6	Major Transportation Corridor Landscape	Slight	Insignificant	4, 5, 7, 9, 11, 12	4, 5, 7, 11, 13, 15	Slight	Insignificant	Insignificant
KLCA-7	Major Water Course Corridor Landscape	Insignificant	Insignificant	4, 5, 7, 9, 11, 12, 14.3, 14.4	4, 5, 7, 9, 11, 12, 14.3, 14.4, 14.5	Insignificant	Insignificant	Insignificant

No substantial adverse impacts have been identified in relation to DP Package A.

Prior to mitigation moderate adverse impacts are predicted at the construction and operational stage for KLR 6.1 Ki Lun Shan Hillside Woodland and 6.3 Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong due to high sensitivity of the resource and overall likely scale of felling and earthworks required in order to complete road construction. To avoid damaging a larger proportion of this LR than necessary, minimising the topographical change required to construct the road will limit the level of the impact. In unison, protection and retention of existing trees wherever feasible, combined with tree transplantation, slope landscaping of retaining slopes/embankments and woodland compensatory planting will further reduce the level of impact. It is considered that, post application of mitigation measures, the residual impact significance would remain at moderate during construction and operation (day 1). By year 10 of operation the compensatory planting and slope enhancement will have fully established and reached a level of maturity which would reduce the residual impact to slight.

Moderate adverse impacts are predicted at the construction and operational stage, prior to mitigation at KLR10.2 Sheung Shui Community Sports as the proposed works will require a lot of changes to this area, removing some mature vegetation and requiring demolition works. Mitigation work will primarily focus on replacement of lost trees within the immediate area whereas mitigation for the loss of Open Space will be re-provisioned within the wider NDA development. These combined measures are considered adequate to bring the residual impact to insignificant by year 10.

Moderate adverse impacts are predicted at the construction and operational stages for KLR3.1 Ho Sheung Heung Ponds prior to mitigation, albeit the majority of the loss of this LR will be as a result of the Schedule 3 works. Although some of the ponds in these areas are permanently lost without direct replacement, the conservation and enhancement of the LVNP will ensure the retention and provision of ponds in this area. In addition one principle of planning the new RODP is to incorporate some new ponds, for example the Fung Kong Shan Park in E1-7 will incorporate a pond. Although this will not directly compensate for the loss of ponds, it will help to alleviate the impact. Therefore although some ponds are irreversibly lost, at construction and operation day 1 the residual impact significance is considered to reduce to slight, and by year 10 when any ponds in the RODP have had time to establish and the enhanced ponds in the LVNP have had time to confer a positive effect, the residual impact will be insignificant.

At the construction and operational stages, prior to mitigation, moderate adverse impacts will be experienced by KLR 7.3 Lowland Woodland in Pak Shek Au and Tong Kok as a result of felling of trees within this valuable resource. Compensation space will be provided within the road verges, reinstated work areas and within the highway corridor of DP. In this case,

moderate impacts will still be experienced post mitigation at the construction operational stages as compensation planting will not have fully established. By operation year 10, this impact will drop to slight as woodland planting matures.

Moderate adverse impacts are predicted at the construction stage at KLR 12.9 Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang prior to mitigation works. This is as a result of the large area that will be impacted within the LR, involving tree felling, earthworks and demolition of buildings. The mitigation in this regard focuses on retention, transplantation and compensation of woodland planting where this has been impacted upon. It is considered, with the mitigation measures suggested this impact can be reduced to slight during construction and eventually to insignificant by year 10, as planting matures are begins to provide sufficient compensation.

KLR 2.1 Streams in Kwu Tung are predicted to experience moderate adverse impacts at construction prior to mitigation. This is as a result of disturbance of this LR, albeit in limited extent, due to the Schedule 2 works.

Moderate adverse residual impacts are predicted in the construction stage as the impact on the LR cannot be fully mitigated however, the area affected by the DP works is limited and where retention of the stream is possible then culverting work will be implemented to form crossing points allowing retention of the stream. In this case the operational impact would reduce to slight in operation day 1 and year 10.

It is predicted that moderate adverse impacts would be generated prior to mitigation in relation KLR 9.1 Long Valley Agricultural Land and due to the loss of a small piece of this valuable and sensitive landscape. Careful planning of the revised RODP means most of the agricultural land in Long Valley and Ho Sheung Heung will not be affected. Large areas of other agricultural LRs, however, will be affected and permanently lost, mainly due to the Schedule 3 works. There is no direct compensation for the agricultural land lost but direct mitigation includes the possible preservation and protection of any trees in such LRs and where unavoidably affected, transplantation or compensatory planting which will only mitigate the impact very slightly. The loss of agricultural land has been carefully studied for this Project however; the setup of the LVNP and preservation and even enhancement of agricultural land in that area, as well as zoning of large sites C2-2 and C1-6 to the north and south of LVNP as agricultural land, is considered to go some way to help alleviate impacts on this LR. In addition, this broad agricultural land category (LR9) encompasses both active and abandoned agricultural land including orchard areas. According to a further review and site inspection in December 2012/January 2013 by the PlanD with AFCD assistance, the amount of active agricultural land affected by the Project in KTN NDA is approximately 4 ha. According to the AFCD Annual Report 2011-2012, currently, there are 4,071 ha of abandoned agricultural land in Hong Kong and 734 ha of active agricultural farmland and as such, the affected agricultural land only

represents a small percentage of active agriculture land in Hong Kong. In the surrounding areas of the Project, 160 ha of land have been found potentially suitable for agricultural rehabilitation/re-site in the above mentioned site inspection. The major cluster (34 ha) is found at Kwu Tung South. Since there is no direct mitigation for the loss of agricultural land, the significance of impact on this LR will remain the same before and after mitigation.

Moderate adverse impacts are predicted during the construction stage in relation to KLR14.1 Fanling Highway and nearby associated roads due to sheer scale of the construction works that will occur within the highway corridor. This would involve extensive excavation, ground works, reconfigurations works and felling of plantation trees which currently line the road (both sides would be affected). During construction, measures to protect existing tree and transplant trees, where feasible, together with provision of compensatory planting is considered to have the capacity to reduce the impacts to slight during construction and eventually insignificant in the operational stage once planting has established and matured.

Moderate adverse impacts are also predicted during construction prior to mitigation in relation to KLR 5.4 Old and Valuable Trees (OVT) Castle Peak Road, as these will sit directly within a major construction site and highway works will be reconfigured around them. In this case mitigation measures applied to protect the trees during the construction stage will reduce the impact to insignificant. In operation the impact will be insignificant as the trees will be retained within a new and widened landscape median in the centre of the road.

Moderate adverse impacts during construction are predicted for LR5.1 Plantation South of Fanling Highway as construction works for the realignment of Kwu Tung Road will require the felling of trees over an area of 0.56ha. This plantation forms the roadside planting on embankment and will be compensated like for like. In this case the impact can be mitigated to insignificant by year ten as replacement planting would directly compensate for the loss of trees.

The remaining LRs will all experience a slight or insignificant impact at the construction and operational stages.

In terms of residual impact on LCAs, moderate adverse impacts are predicted during the construction and operational stage in relation to KLCA 5 Lowland Agricultural Landscape although small area of this LCA is affected by the DP3. The overall loss of agricultural land directly impacts the rural character of the landscape, which is difficult to fully mitigate. As a result it is considered the residual impact post mitigation will remain unchanged.

Moderate adverse impacts are predicted for KLCA 1 prior to mitigation due to the interference of natural topography and vegetation as a result of embankment construction and road verges. Given the limited extent of the works on the fringes of the LCA, it is considered careful design of the proposed engineered slopes, protection of vegetation and replanting of slopes can reduce the impact to slight in construction post mitigation and operation da

1. By year 10 establishment of slope planting measures would have reduced the impact to insignificant.

Slight adverse impacts are predicted in construction for KLCA 6 Major Transportation Corridor Landscape due to the sheer scale of the construction footprint. This would involve extensive excavation, ground works, alignment reconfiguration and felling of plantation trees which currently sit within the road verge (both sides would be affected). During construction, measures to protect the planting resources, transplant trees where feasible together with provision of compensatory planting are considered to have the capacity to reduce the impacts. Following application of mitigation this impact would remain as slight during construction; impacts will be insignificant in the operational stage as the development would mainly be within the existing major infrastructure corridor.

Slight adverse impacts are anticipated in relation to KLCA 2 Rural and Urban Peripheral Village Landscape during construction, prior to mitigation. It is considered that residual impacts in construction and day 1 operation can be mitigated to slight levels through tree preservation, transplantation and compensatory planting given the relatively small areas concerned. Impacts to KLCA 2 would reduce to insignificant during operation (year 10) as compensatory planting will have fully established and reached a level of maturity.

KLCA 4 Industrial landscape and KLCA 7 Major Water Course Corridor Landscape will experience insignificant impacts during both construction and operation due to the existing character and nature of these degraded areas and no direct impact on rivers.

12A10.1 Conclusion

Mitigation works in relation to these DPs during the construction stage rely heavily on the minimisation of the footprint of the works area, avoidance of significant topographical changes together with retention and protection of existing trees / vegetation. These measures if deployed have the capacity to reduce, in most cases, the level of residual impact experienced by the LRs and LCAs at the construction stage.

It is not possible to fully mitigate all impacts in relation to loss of mature woodland or tree planting for all LRs and LCAs in the construction period and early operational stages, mainly as long periods of time are required to sufficiently compensate for this type of impact. Providing compensatory measures are applied, in combination with transplantation of existing trees (which can help to accelerate the establishment period), the impacts to LRs affected by these DPs can be reduced to slight or insignificant levels.

On review of the likely residual impacts and possibility to reduce all to slight or insignificant level by operational year 10, it is considered that DPs 1, 2, 3 and 4 would be acceptable in terms of landscape impacts.

12A.11 Visual Impact Assessment

Visual impacts have been assessed for the construction and operational phases of the Schedule 2 DPs with the methodology as set out in **Section 12.19**.

12A11.1 Visual Baseline conditions

The area covered by KTN NDA, of which the schedule 2 DP form part, is around 450 ha and is bound by the Closed Area Boundary to the north; Shek Sheung River to the east; Fanling Highway and Castle Peak Road to the south; and Pak Shek Au and Tit Hang villages to the west. The landscape character of the area can be broadly described as a low value, rural lowland area predominantly used for open storage and industrial uses, surrounded by higher value, natural landscape features, villages and interspersed with agricultural land.

This locality is fairly enclosed by prominent green hill ranges in close proximity on three sides: the ridges of Tai Shek Mo to the north; Lok Ma Chau range to the west (Western ranges); and Ki Lun Shan and Ki Lun Shan Au to the south. The lower lying Ma Tso Lung valley runs between Lok Ma Chau range and Tai Shek Mo while between Lok Ma Chau range and Ki Lun Shan there is lower land containing Pak Shek Au village and the Fanling Highway. To the east of the land is generally flatter and more open until past the urban area of Sheung Shui, where the hill range including Cham Shan and Wa Shan is visible. Fung Kong Shan is also a prominent hill in the middle providing strong green backdrop. Hill slopes are undisturbed and mainly vegetated by grass and scrub vegetation with trees found principally in the foothills and major valleys. Villages such as Kam Tsin and Ho Sheung Heung have been established at the base of the foothills with clusters of trees or woodland on the lower slopes.

The central southern and south eastern parts of this landscape are generally flat with the central southern part being more developed and the south eastern part made up of the predominantly agricultural Long Valley. The Long Valley is a significant rural feature of this area with high landscape value, made up of a mix of active and inactive agricultural land, some ponds, small areas of marsh and mitigation wetlands with limited built structures. The central southern part of the study area is more developed, made up of mixed land uses such as small residential developments, scattered villages, agricultural lands, rural areas and rural industries including vehicle repair, construction material storage and container storage. Villages, such as Yin Kong Village and Ho Sheung Heung are generally made up of traditional houses with no high rise structures, complementing the rural surroundings. Rivers and streams are also important features of the local landscape. The channelised Sheung Yue River and Shek Sheung River are both dominant visual components of the landscape, made more conspicuous by their engineered embankments.

DP1 - San Tin Highway / Fanling Highway Kwu Tung Section Widening (between San Tin Interchange and Po Shek Wu Interchange) (Major Improvement) and DP2 Castle Peak Road Diversion.

The Fanling Highway in the south is a major road with heavy traffic and with Castle Peak Road running parallel; these combined transport routes form a prominent linear, urban feature cutting through the landscape. Existing mature tree planting, which runs on either side of the highway and along Castle Peak Road, contains the view to within the highway corridor.

Whilst existing mature tree planting provides important visual amenity and screening, this is an extremely busy multi-lane highway with large junctions which generates a relatively low quality visual environment. Visibility to the wider landscape is generally restricted to glimpse views of the surrounding mountains.

DP3 - KTN NDA Road P1 and P2 (New Road) and associated new Kwu Tung Interchange (New Road) and Pak Shek Au Interchange Improvement (Major Improvement)

This DP comprises two primary distributor roads which form interchange connections with the Fanling Highway to the east and west of the KTN NDA. The western primary distributor road (Road P1) will branch off from the supplementary interchange near Pak Shek Au. The eastern dual 2-lane elevated primary distributor road (Road P2) branches off from the proposed Kwu Tung Interchange near Yin Kong, crossing Sheung Yue River and joins another proposed at-grade roundabout, which will become a major junction with the internal roads south of the Kwu Tung Station.

The Road P1 site occupies level ground to the west of the study area within a predominantly wooded area. The southern half of this works area sits within land used for open storage which is generally more open due to clearance of vegetation and formation of compounds and access tracks. The natural wooded areas provide valuable visual amenity whereas the open storage land general detracts from the quality of the view. At lower levels, long distance views are heavily limited by intervening tree cover.

The site for Road P2 occupies a more developed location in terms of open storage functions and agricultural land. The open storage areas generally detract for the quality of the visual environment and open up shorter to medium length views through the local landscape. The agricultural landscape provides valuable visual amenity and allows longer distance views to the surrounding mountain landscape due to the open nature of these landscapes.

DP 4 - KTN NDA Road D1 to D5 (New Road)

These distributor roads (Road D1 and D2) will provide direct connectivity between the diverted Castle Peak Road and KTN NDA and occupy three locations around the study area. Two roads which link to DP3 and DP2 occupy level ground to the south of the study area, north of Castle Peak Road. The site comprises elements of open storage uses which detract for the quality of the visual environment whilst opening up some medium distance views to the surrounding area. Tree cover, especially in relation to the western road, creates strong visual enclosure.

A loop road to the north of the study area encircles Fung Kong Shan. The site comprises a mixture of rural settlements, open storage and woodland areas. At lower levels views are restricted by intervening tree cover. The terrain become slightly more elevated to the north however, views are still restricted by surrounding vegetation. Glimpse views back into the study area are possible, more extensive views are possible from the Fung Kong Shan.

12A11.2 Visual envelope

The visual envelope (VE) for these DPs is generally shared with that of the KTN NDA project although this area has been increased slightly to fully incorporate the eastern and western extent of the DP1 road widening works. Generally the viewshed is confined to the north and east by the ridgeline formed by the summits of Cheung Po Tau, Cham Shan, Wa Shan and reaching across to the more distant and easterly Tsung Shan and Mau Tau Leng summits. To the south east the foothills of Lung Shan contain the view while to the southern and western side the VE is contained by the high-rise development of Fanling / Sheung Shui with the mountain range of Tai Shek Mo in the background. The predominantly level landscape means that views from elevated positions can generally see very long distances whereas many ground level views are limited by intervening vegetation cover and built form.

12A.12 Sensitivity of VSRs/VPs

Table 12A.12.1 below details the VSRs/VPs in relation to DP1, 2, 3 and 4 and describes their overall sensitivity. This information is also presented on the following figures:

Figures 12.53.1 Vantage Point (VP) Locations

Figures 12.53.3 to 14 present existing views taken from vantage points throughout the study area looking towards the relevant NDA and the DPs. Given the numerous views that would be possible as a result of the scale of the study area and number of views, for example from a residential tower, representative photographs have been selected that present a typical view from the VSR. Since access could not be gained for all VSRs, especially for private residential developments, the representative viewing locations may have been adjusted if necessary, as described in the methodology. Bearing in mind most VSRs will have various views, and considering access was not always available, the selected photographs are considered the best alternative that represents the typical view of the VSRs.

Figures 12.55.1a to 12.55.6b provide representative photomontages showing the predicted view from selected viewpoints depicting existing conditions, Day 1 of Operation Phase without Mitigation Measures, Day 1 of Operation Phase with Mitigation Measures and Year 10 of Operation Phase with Mitigation Measures.

Table 12A.12.1 – VSRs and their sensitivity (DP 1, 2, 3 and 4)

VSR CODE	Name	Category of VSR (Strategic/ District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many/ Many/ Few/ Very Few)	Quality of Existing View (Good/ Fair/ Poor)	Availability of Alternative Views (Yes/ No)	Degree of Visibility (Full/ Partial/ Glimpse)	Duration of view (Long/ Medium/ Short)	Frequency of View (Very Frequent/ Frequent/ Occasional/ Rare)	Sensitivity (Low/ Medium/ High)
	Description of Existing View, particularly toward the Proposed DP										
KVP1a	Highpoint above Pak Shek Au, facing south	District	Recreational	230	Few	Good	Yes	Partial	Short	Occasional	Medium
	<p>Elevated view, orientated south, from hillside north east of Pak Shek Au.</p> <p>An extensive panoramic view is available across the study area in the mid-ground with longer distance views available towards the Sheung Shui/ Fanling Urban area.</p> <p>The landscape appears well wooded and conceals a great deal of development, blurring the transition of the various low level land uses until the view meets the high rise urban development areas.</p> <p>Modern residential developments such as Europa Garden and Valais are more visible due to the block style layout of the houses. The Fanling Highway is well screened within the views as it passes in front of Ki Lun Shan below the Kwu Tung Freshwater Service Reservoir.</p>										
KVP1b	Highpoint above Pak Shek Au, facing northeast.	District	Recreational	230	Few	Good	Yes	Partial	Short	Occasional	Medium
	<p>Alternative angle view from same point as VP 1a facing northeast towards the undulating mountainside of Tai Shek Mo.</p> <p>View is similar in nature with long distance panoramic view across the level landscape over Kwu Tung towards Sheung Shui/ Fanling urban area.</p> <p>Larger scale industrial type development is visible to the north of Tung Fong which detracts from the views and appears out of scale compared to other development due to the extensive roofscape and lack of tree cover.</p>										
KVP2 (K22)	Ki Lun Shan Footpath	Strategic	Recreational	440	Few	Good	Yes	Full	Medium	Occasional	Medium
	<p>The footpath up to the summit from the south is largely through grassland with views to the north being screened by the mountain ridgeline. Electricity pylons extending across this natural landscape are visual detractors close to the footpath route. Views from the summit are panoramic and cover a long distance overlooking a landscape of a semi-rural character with intermitted urban development, particularly the high rise structures of Shenzhen across the border in the middle and far distance.</p> <p>Generally facing north, north east, the rural Kwu Tung District is clearly visible along with the undeveloped agricultural land of Long Valley which creates a strong contrast to the high density and high rise Sheung Shui/ Fanling urban area further to the east. Residential housing forming the Valais development and other smaller development around Hang Tau are also visible at the foot of the hill.</p>										
KVP3	Pedestrian bridge over Fanling Highway	Local	Travelling	0	Many	Poor	No	Full	Short	Frequent	Low
	<p>Elevated view from pedestrian footbridge over the Fanling Highway provides medium to long distance views along the road, existing mature vegetation on either side contains the view along the carriageway. The view is completely dominated by the wide carriageway and adjacent minor roads (Castle Peak to Kwu Tung Section), generally this is a poor quality visual environment with little amenity.</p> <p>The mature tree cover provides important visual respite within the view albeit screening the more scenic long distance views to the surrounding mountains.</p>										

VSR CODE	Name	Category of VSR (Strategic/ District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many/ Many/ Few/ Very Few)	Quality of Existing View (Good/ Fair/ Poor)	Availability of Alternative Views (Yes/ No)	Degree of Visibility (Full/ Partial/ Glimpse)	Duration of view (Long/ Medium/ Short)	Frequency of View (Very Frequent/ Frequent/ Occasional/ Rare)	Sensitivity (Low/ Medium/ High)
	Description of Existing View, particularly toward the Proposed DP										
KVP 4 (K18)	Ascot Park Area	Local	Residential - Low Rise	110	Very Many	Fair	No	Glimpse	Long	Occasional	Medium
	<p>This VSR represents residents in low rise developments around Kam Tsin, including Kam Tsin Tsuen, Ascot Park, The Royal Oaks and La Regent Park.</p> <p>Views to the north of these VSRs have partially blocked due to a number of factors. These include low lying topography; many houses in close proximity shielding each other's views; landscaping including screen planting along the roads; and Fanling Highway to the north.</p> <p>The view from upper levels of local houses will be more open over the highway and into the middle of the study area, but the extent will still be partially limited by intervening vegetation cover.</p>										
KVP5 (K16)	Tai Ping Area High Rise Residential Blocks	District	Residential - High Rise	1000	Very Many	Good	Yes	Full	Long	Very Frequent	High
	<p>Views from the upper storeys of high-rise residential blocks around the area of Tai Ping Estate and The Royal Green have panoramic long distance views.</p> <p>Some apartments at high levels facing west and north west look towards the proposed DP sites; for these residents other high rise blocks or industrial areas and Fanling Highway are prominent features of the existing view but there are also significant open areas with low lying woodlands and some low-rise residential areas which are distinctly rural in character.</p> <p>Residents on the western side of the towers have a long distance view along the open corridor formed by the Fanling Highway.</p>										
KVP6 (K15)	Choi Po Court / Choi Yuen Estate	District	Residential - High Rise	1050	Very Many	Good	Yes	Full	Long	Very Frequent	High
	<p>The views from these residential buildings including Choi Po Court and Choi Yuen Estate are open and panoramic for those flats at higher levels.</p> <p>Only those apartments facing north west have full and panoramic views towards the DPs with no alternative, although other residents may face away from the area.</p> <p>For those facing north west, in the foreground the industrial zone between Choi Yuen Road and the MTR East Rail line is a prominent feature, continuing north east to include the industrial zone east of the railway with the Shek Wu Hui Sewage Treatment Works.</p> <p>The Lo Wu Correctional Institution is also visible in this direction, at the foot of Tai Shek Mo, and in the far distance the high rises of Shenzhen are visible. The view spanning west is more rural, with Tai Tau Leng and Tsung Pak Long in the foreground and the open agricultural fields of Long Valley behind, with the Western Range in the background.</p> <p>Further west the new developments of Valais and Europa Gardens are just visible around Fanling Highway against the green backdrop of Ki Lun Shan.</p>										

VSR CODE	Name	Category of VSR (Strategic/ District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many/ Many/ Few/ Very Few)	Quality of Existing View (Good/ Fair/ Poor)	Availability of Alternative Views (Yes/ No)	Degree of Visibility (Full/ Partial/ Glimpse)	Duration of view (Long/ Medium/ Short)	Frequency of View (Very Frequent/ Frequent/ Occasional/ Rare)	Sensitivity (Low/ Medium/ High)
	Description of Existing View, particularly toward the Proposed DP										
KVP7 (K13)	Industrial Zone northeast of Tsung Pak Long	District	Occupational	820	Many	Poor	Yes	Glimpse	Short	Occasional	Low
	Occupational views from the medium rise industrial buildings north of Choi Yuen Road have open, elevated views across the traditional agricultural fields of the Long Valley and the low-rise residential development of Tsung Pak Long and Yin Kong to the west and southwest. The view is predominantly rural in nature. Workers in these factories will be concentrating on their work inside the buildings, not the views outside. They have limited windows facing out in the direction of the KTN NDA area so will only get glimpse views.										
KVP8	Ying Kong Village	Local	Residential	275	Many	Fair	Yes	Partial	Long	Frequent	High
	Views from edge of agricultural plots fronting Ying Kong Village provide panoramic low level views across farmland; this is crossed by numerous telegraph poles and intermittent agricultural structures which detract from the quality of the views. The dense and uniform screening provided by mature tree planting in the middle ground restricts long distance views however the peaks and ridgeline of mountains in the distance appear above the tree cover, such as the varied and steep terrain of Tai Shek Mo.										
KVP9 (K6b)	Ho Sheung Heung	Local	Residential - Low Rise	100	Many	Good	No	Glimpse	Long	Rare	High
	View from the southern point of the Tai Shek Mo facing towards the Fanling Highway. At ground level most views are blocked by existing built structures and woodland plantation such as the landscaped trees along the trained Sheung Yue River. Most houses face east but from elevated viewpoints, such as the upper level of local houses and the slightly elevated Chung Kuk Path, there are some glimpses to the southeast of the Long Valley area with the open agricultural land and some of the high-rise buildings of Sheung Shui/ Fanling.										
KVP10 (K5b)	Southern Knoll of Fung Kong Shan – Facing North	District	Recreational (& some Residential & Occupational)	Approx.100m when looking towards both east and south	Few	Good	Yes	Full	Medium	Frequent	Medium
	View from the elevated ground of Fung Kong Shan looking north across the study area towards the mountain backdrop of Tai Shek Mo. Pockets of open storage areas disrupt the rural nature of this view; otherwise the level plains appear natural and undeveloped. The existing electricity pylons nearby and open storage area which cross the view detract from the visual quality. Low scale development in the middle distance is heavily screened by intervening trees.										

VSR CODE	Name	Category of VSR (Strategic/ District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many/ Many/ Few/ Very Few)	Quality of Existing View (Good/ Fair/ Poor)	Availability of Alternative Views (Yes/ No)	Degree of Visibility (Full/ Partial/ Glimpse)	Duration of view (Long/ Medium/ Short)	Frequency of View (Very Frequent/ Frequent/ Occasional/ Rare)	Sensitivity (Low/ Medium/ High)
	Description of Existing View, particularly toward the Proposed DP										
KVP11 (K4)	Cottage Area (Western Range)	Local	Residential - Low Rise	140	Few	Good	No	Partial	Long	Very Frequent	High
	<p>This VSR is located in a small valley at the eastern foothills of the Western Range, just north east of Tit Hang and south west of the Lo Wu Rifle Range.</p> <p>Views are limited to the south east in the direction of the DPs with the Western Range rising behind, blocking views to the north west.</p> <p>In the mid-distance, Tai Shek Mo summit and ridgeline frame the view from north east to east. To the south east, the view is partially blocked by the knolls of Fung Kong Shan but some of the Kwu Tung Area is visible and in the background the urban sprawl of Fanling/ Sheung Shui is evident.</p> <p>To the south, the existing open storage area near Tung Fong is a visually detracting element in the mid-distance.</p> <p>Generally the existing view is rural in nature, characterised by mixed-use cottage areas, interspersed by mature trees and small copses and the wooded foothills of Tai Shek Mo in the foreground.</p> <p>Residents in these settlements have their low level views largely blocked by vegetation (e.g. small copses) and existing built structures.</p>										

Remarks: The *approximate closest viewing distance to the proposed schedule 2 DP* is measured from the edge of the VSR group to the closest built form proposed within the DP.

12A.13 Magnitude of Visual Change

The potential sources of visual impact due to the Project are described in **Section 12A.4 and 5**. They will create varying levels of visual impact during the construction and operation phases in relation to each DP, due to factors such as visual obstruction, degradation of the quality of existing views and incompatibility with the surrounding landscape setting. The visual impact assessment considers each DP individually.

The magnitude of visual change is largely dependent on a number of factors as outlined in the methodology. In general, the magnitude of change will reduce the further a VSR is from the Project.

Detailed engineering design of built elements is ongoing at this stage therefore, the structures shown in the photomontages may change as detailed design is refined.

Table 12A.13.1 details the magnitude of change in relation to DPs1, 2, 3 and 4.

Table 12A.13.1 - Magnitude of visual change for VSRs due to Schedule 2 DPs (1, 2, 3 and 4) in KTN NDA

Remarks: The approximate closest viewing distance to the proposed NDA is measured from the edge of the VSR group to the closest built structure proposed within the NDA.

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic / District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
								Description of Impacts during Construction and Operation							
	KVP1a	Highpoint above Pak Shek Au, facing south	District	DP1, DP2, DP3, DP4	Partial	230	Medium	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Small
<p>DP1 San Tin Highway / Fanling Highway Kwu Tung Section Widening (between San Tin Interchange and Po Shek Wu Interchange) (Major Improvement) and DP2 Castle Peak Road Diversion</p> <p>The widening and diversion works associated with DP1 and 2 will be visible appearing from the west (to the right hand side of the view) as the highway runs in front of Ki Lun Shan. This increased visibility will mainly be due to loss of vegetation cover, demolition of structures and further encroachment of the road corridor closer to the viewpoint.</p> <p>Tree clearance works are likely to make the highway corridor more apparent in similar elevated views; at present it is well embedded within woodland cover. Partial views towards new noise barriers which will run up through the central road corridor will be possible together with views of the roofscape of the enclosed noise barrier proposed to the east of the new interchange.</p> <p>Views of new pedestrian crossing points will also be possible.</p> <p>DP3 KTN NDA Road P1 and P2 (New Road) and associated new Kwu Tung Interchange (New Road) and Pak Shek Au Interchange Improvement (Major Improvement)</p> <p>The construction of DP 3 road P1 at the bottom of the slope in the foreground will be the most significant in this view due to proximity of the construction footprint and approximate 40m wide construction corridor. Tree felling at the bottom of the slope will open up views of the construction in the short term. The construction footprint becomes wider along the western edge of the DP as the road construction approaches and forms a connection with the Fanling Highway as a result of earthwork cutting works into the lower hillside. This connection comprises an off line at-grade roundabout. The slip road for traffic from Kwu Tung to Tai Po will be diverted to connect with the offline interchange, facilitating the additional slip roads for diverging traffic from Yuen Long. The Pak Shek Au Interchange will connect with the diverted Castle Peak Road though an underpass single 2-lane carriageway beneath these slip roads.</p> <p>The western elevation of several noise barriers will be visible directly opposite the viewpoint running along the road</p> <p>The scale of development is considered to be medium, although the development covers a wide area, the road corridor is narrow and would be less conspicuous as the distance from the VSR increases. The compatibility of the DPs with surrounding landscape is considered to be poor during construction as tree felling will occur and road development will appear in previously less developed areas. The KTN NDA development will occupy a significant proportion of this view in the future and the majority of roads visible during construction will be integrated with the development footprint and no long visible. Sections which sit outside the development will be seen in the context of new urban development, therefore the compatibility during operation is considered to be fair.</p> <p>DP4 KTN NDA Road D1 to D5 (New Road)</p> <p>Road D1 which forms part of DP4 would be visible linking DP2 and DP3 (road P1) in the centre of the view moving away from the viewpoint. The construction corridor will be approximately 25m wide. Existing mature vegetation throughout the lowlands in the middle of the views will help restrict the visibility of the development.</p> <p>A semi-enclosed noise barrier and section of vertical constructed along the alignment are likely to be visible.</p> <p>The scale of development is considered to be medium, although the development covers a wide area, the road corridor is narrow and would be less conspicuous as the distance from the VSR increases. The compatibility of the DPs with surrounding landscape is considered to be poor during construction as tree felling will occur and road development will appear in previously less developed areas. The KTN NDA development will occupy a significant proportion of this view in the future and the majority of roads visible during construction will be integrated with the development footprint and no long visible. Sections which sit outside the development will be seen in the context of new urban development, therefore the compatibility during operation is considered to be fair.</p> <p>As a result of the scale of the construction works that would be visible the magnitude of change is considered to be intermediate during construction. As the DPs will appear in an area that has seen various types of human development including minor roads, highway infrastructure, urbanisation and farming the magnitude of change during operation is considered to be Small. In the future the DPs will be integrated within the future KTN NDA which will greatly reduce their visibility.</p>															

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic / District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
	KVP1b	Highpoint above Pak Shek Au, facing northeast.	District	DP3, DP4	Partial/Nil	230	Medium	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Small
		DP3 KTN NDA Road P1 and P2 (New Road) and associated new Kwu Tung Interchange (New Road) and Pak Shek Au Interchange Improvement (Major Improvement) The northern section of road P1 would be visible at the bottom of the slope forming a junction with DP4. The construction corridor of DP reduces from approximately 50m to 25m wide at this junction, mainly due to the reduced slope cutting required on the western edge of the scheme. Tree clearance and demolition of structures in the foreground will open up some additional views of the construction corridor. Several noise barriers constructed around the junction will also form part of the view. DP4 KTN NDA Road D1 to D5 (New Road) DP 4 forms a loop around the north part of the study area in this view; two roads would be visible moving away from the viewpoint and curving around the rear of the Fung Kong Shan visible beyond the Sheung Shui Community Sport. The construction corridor will be approximately 25m wide throughout the loop area, although this does widen in several location where slope cutting operations are required. Existing mature vegetation throughout the lowlands in the middle of the views will help restrict the visibility of the development. Noise barriers constructed at points along the alignment are likely to be screened by existing tree cover. The scale of development is considered to be medium, although the development covers a wide area, the road corridor is narrow and would be less conspicuous as the distance from the VSR increases. The compatibility of the DPs with surrounding landscape is considered to be poor during construction as tree felling will occur and road development will appear in previously less developed areas. The KTN NDA development will occupy a significant proportion of this view in the future and the majority of roads visible during construction will be integrated with the development footprint and no long visible. Sections which sit outside the development will be seen in the context of new urban development, therefore the compatibility during operation is considered to be fair. As a result of the scale of the construction works that would be visible the magnitude of change is considered to be intermediate during construction. As the DPs will appear in an area that has seen various types of human development including minor roads, highway infrastructure, urbanisation and farming the magnitude of change during operation is considered to be Small. In the future the DPs will be integrated within the future KTN NDA which will greatly reduce their visibility.													
Y	KVP2 (K22)	Ki Lun Shan Footpath	Strategic	DP1, DP2, DP3 and DP4	Nil	440	Small	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Small	Small
		DP1 San Tin Highway / Fanling Highway Kwu Tung Section Widening (between San Tin Interchange and Po Shek Wu Interchange) (Major Improvement) and DP2 Castle Peak Road Diversion The construction works for DP1 will be visible as they pass within the low ground in front of Ki Lun Shan, this will mainly result from tree felling works which will widen the existing infrastructure corridor. Numerous noise barriers and large semi-enclosed noise barrier structures will be visible running almost continuously along the center of the road corridor. The roofscape of the enclosed and semi-enclosed noise barrier structure will coincide with the Valais residential development which can be seen in the center of the view. The road diversion works associated with DP2 are also likely to be visible to the north of the Fanling Highway although the two projects are likely to be perceived as one. DP3 KTN NDA Road P1 and P2 (New Road) and associated new Kwu Tung Interchange (New Road) and Pak Shek Au Interchange Improvement (Major Improvement) and DP4 KTN NDA Road D1 to D5 (New Road) The construction corridor for DP3 will run along the foot of the western ranges to the west of the proposed NDA development. The construction corridor of DP3 will be around 30-50m wide close to the Fanling Highway to accommodate the interchange works. Views of earthworks cutting against the hillside are likely during construction, the felling of lowland woodland in this area will also open up views. Numerous noise barriers will be constructed within the DP3 and DP4 road corridors, it is likely those along DP3 road P1 as it forms a junction with DP4 will be the most visible. Due to distance, the remaining areas of the road construction will be out of view. The overall compatibility of the DPs during construction and operation is considered to be fair as the works will occupy only a very small part of this view set within an existing infrastructure corridor and wider urbanised areas. The scale of the development in this view is considered to be small as it would form only a very small part of a panoramic view encompassing a landscape which has undergone many types of human influence including minor roads, highway infrastructure, urbanisation and farming. As a result the magnitude of change during construction and operation is considered to be Small. In the future the DPs will be seen in the context of or fully integrated within the future KTN NDA which will greatly reduce their visibility.													

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic / District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
	KVP3	Pedestrian bridge over Fanling Highway	Local	DP1, DP2 and DP3	Full	0	Medium	Fair	Good	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Small
		DP1 San Tin Highway / Fanling Highway Kwu Tung Section Widening (between San Tin Interchange and Po Shek Wu Interchange) (Major Improvement), DP2 Castle Peak Road Diversion and DP3 KTN NDA Road P1 and P2 (New Road) and associated new Kwu Tung Interchange (New Road) and Pak Shek Au Interchange Improvement (Major Improvement) Views from the pedestrian bridges crossing the highway will have an uninterrupted view of the construction work. The most dominant new component in this view will be a series of 5m high plus 3m inclined noise barriers which will run throughout the highway corridor, beyond this the elevated Kwu Tung Interchange will appear above the road. The combined construction corridor will be over 100m wide at this point. Tree felling along the northern boundary of the highway is likely to open up glimpse views into the KTN area in the short term. The compatibility of the DPs are considered to be fair during construction, as they will broadly be contained within the existing road corridor albeit the scale of the construction activities will be a visual detractor. The compatibility will improve to good in operation as the DPs would be in keeping within the existing land use and visual expectations of a major road corridor. The scale of the development area is considered to be medium in this views as only a limited portion of the DPs is visible. Taking into account the existing operation of this landscape as a major road corridor and the scale of the construction works that would be visible the magnitude of change during construction is considered to be intermediate. In operation the highway function will not change therefore the magnitude of change during operation is considered to be small.													
Y	KVP 4 (K18)	Ascot Park Area	Local	DP1, DP2	Partial	110	Small	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Small	Small
		DP1 San Tin Highway / Fanling Highway Kwu Tung Section Widening (between San Tin Interchange and Po Shek Wu Interchange) (Major Improvement) and DP2 Castle Peak Road Diversion The construction of DP1 and 2 works will pass through the centre of this view from west to east, comprising around 200m of the 4km DP works area. Presently the view toward the road corridor is open, with visibility beyond the highway restricted by tree screening along Castle Peak Road. Tree felling as a result of widening works may open up longer distance views from this point. The most dominant visual component of the construction works will be the erection of 5m high plus 3m inclined noise barriers throughout the highway corridor, the elevation of the barrier running along the southern boundary of the highway within the DP works will completely screen views of the highway. Given the limited extent of the DP works area visible from this point the scale of the development would be small. The existing view is principally of the highway corridor, views of this feature will be screened during operation which would benefit the view. In this case the compatibility during construction and operation is considered to be fair. As a result of the small scale nature of the development which would mainly be located within the existing highway corridor, the magnitude of change during construction and operation is considered to be small.													
	KVP5 (K16)	Tai Ping Area High Rise Residential Blocks	District	DP1, DP2, DP3	Partial	1000	Small	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Small	Negligible
		DP1 San Tin Highway / Fanling Highway Kwu Tung Section Widening (between San Tin Interchange and Po Shek Wu Interchange) (Major Improvement) and DP2 Castle Peak Road Diversion These DPs are likely to be the most dominant component of the view is aligned along the road corridor. The proposed widening works, construction of the 5m high plus 3m inclined noise barriers and fully enclosed noise barrier structures will be visible in the centre of the view although due to distance and intervening tree cover on the south side of the road, these views would progressively disappear. Tree clearance along the northern side of the road will increase the visibility of construction and partially increase the dominance of road infrastructure in the view. DP 3 KTN NDA Road P1 and P2 (New Road) and associated new Kwu Tung Interchange (New Road) and Pak Shek Au Interchange Improvement (Major Improvement) The majority of DP3 works would be screened by intervening vegetation in views from this point however; glimpse views of the elevated Kwu Tung Interchange roundabout are likely beyond the proposed noise enclosure works as part of DP1. It is considered that the compatibility of these works during the construction and operational stage would be fair as they will be broadly contained within the existing highway corridor which is an established component in the view. As a result of the majority of the works visible in this view taking place within the existing highway corridor scale nature of the works would be small in this view. The magnitude of change is considered to be small during the construction and operational stage. In operation this would reduce to Negligible during operation as these works would rapidly assimilate with the existing road infrastructure context.													

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic / District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	KVP6 (K15)	Choi Po Court / Choi Yuen Estate	District	DP1, DP2, DP3 and DP4	Partial	1050	Small	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Small	Small
DP1 San Tin Highway / Fanling Highway Kwu Tung Section Widening (between San Tin Interchange and Po Shek Wu Interchange) (Major Improvement) and DP2 Castle Peak Road Diversion The widening and road diversion works associated with these DPs would be visible from this point as long distance views are possible along the entire highway corridor. Tree felling works would increase the overall width of the corridor exposing a more of the construction works and road structure. Noise barrier construction throughout the alignment of the highway will be visible together with bulkier forms of the fully enclosed noise barriers. DP3 KTN NDA Road P1 and P2 (New Road) and associated new Kwu Tung Interchange (New Road) and Pak Shek Au Interchange Improvement (Major Improvement) and DP4 KTN NDA Road D1 to D5 (New Road)The elevated Kwu Tung Interchange roundabout would be the closest point within the DP3 works visible from this point. DP3 would then continue northwards into the KTN NDA area, to meet DP4. The alignment of the road is likely to be visible as it passes through the more open area of the landscape visible in the middle ground. A large proportion of the construction works will be visible from this point, seen within the context of numerous scattered development and large scale linear structures such as the Fanling Highway and local channelised rivers. In this case the compatibility in construction and operation is considered to be fair. Taking into account the small scale nature of these works within a wide landscape view the magnitude of change during construction and operation is considered to be Small.															
Y	KVP7 (K13)	Industrial Zone northeast of Tsung Pak Long	District	DP3, DP4	Partial/Nil	820	Small	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Small	Negligible
DP3 KTN NDA Road P1 and P2 (New Road) and associated new Kwu Tung Interchange (New Road) and Pak Shek Au Interchange Improvement (Major Improvement) and DP4 KTN NDA Road D1 to D5 (New Road) Glimpse views of the Kwu Tung Interchange works above the canopy of the existing trees are likely from this viewpoint. DP3 would then continue northwards into the KTN NDA area, to meet DP4. The alignment of the road is likely to be visible as it passes through the more open area of the landscape in the middle ground. Clearance of trees within the construction corridor would also increase the overall visibility of the DPs. Due to elevation of this VSR, a large proportion of the construction and operation works will be screened at a low level. The compatibility in this case is considered to be fair in both construction and operation. Taking into account the scale of the receiving landscape, the context of existing development in the view the magnitude of change during construction is considered to be small. This would reduce to Negligible during operation as it is considered the DPs would quickly assimilate into this view.															
	KVP8	Ying Kong Village	Local	DP3	Partial	100	Small	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Small
DP3 KTN NDA Road P1 and P2 (New Road) and associated new Kwu Tung Interchange (New Road) and Pak Shek Au Interchange Improvement (Major Improvement) and DP4 KTN NDA Road D1 to D5 (New Road) DP3 will be visible running from the north west to the south east across the centre of this view. Tree felling will open up views along the construction corridor which will be around 50m wide at this point. The road will cross Sheung Yue River in the middle ground of this view therefore the road will become slightly elevated increasing its visibility. A fully enclosed noise barrier will be partly visible beyond the bridge crossing however the majority of the structure is likely to be screened from this point. The compatibility of the DPs during construction is considered to be poor as the construction works will enter into this rural setting. In operation this would reduce to fair as the works would be seen in the context of the development works within the KTN NDA. Taking into account the existing undeveloped nature of the existing view, openness of the agricultural landscape and the small scale nature of the construction works, the magnitude of change during construction is considered to be Intermediate. In operation this would reduce to Small as the construction footprint would reduce and occupy a smaller proportion of the view; i.e. the development would be less conspicuous.															

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic / District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good/ Fair/ Poor)		Duration of Impact (Temporary [Short/ Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	KVP9 (K6b)	Ho Sheung Heung	Local	DP3	Partial	100	Small	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Small	Small
		The roundabout located at the centre of road P2 would be visible as an elevated embankment within the centre of the view. Clearance works within the construction corridor would be unlikely to open up additional views as the area is already relatively open. 5m high, with 3m inclined noise barriers wrap around the roundabout and these would be the most visible element of the scheme. Additional noises barriers would be visible on the north side of the roundabout gradually disappearing behind existing tree cover at the south of the village. Views from this point will experience relatively close hand views of construction, within an open and developed (surface parking and open storage) landscape, the compatibility during construction and operation is considered to be fair. Considering the overall small scale nature of the scheme in this view together with the developed nature of the foreground in the view, the magnitude of change is considered to be small during construction and operation.													
Y	KVP10 (K5b north)	Southern Knoll of Fung Kong Shan (facing north)	District	DP4	Nil	Approx.100m when looking towards both east and south	Small	Poor	Poor	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
		The construction corridor for DP4 will pass through the valley at the foot of Tai Shek Mo to the east. The construction corridor will be around 35m wide at this point with the road constructed on embankment. There are no above ground structures, such as noise barriers, planned within the section visible from this point. Only a small section of the DP will be visible due to intervening terrain and vegetation cover; however the development will appear within a predominantly undeveloped landscape therefore the compatibility during construction and operation is considered to be poor. As a result of the overall small scale of the development visible from this location, the magnitude of change during construction and operation is considered to be Small.													
Y	KVP11 (K4)	Cottage Area (Western Range)	Local	DP3, DP4	Partial/Nil	140	Small	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
		DP3 and 4 will be constructed at the bottom of the slope in the foreground of the view; the works corridor will be approximately 25m wide at this point with the road being formed on an embankment. During construction, tree felling will open up partial views of the development. There are several small sections of noise barrier planned within this section however; they would be predominantly screened from this point by terrain or existing vegetation. As this construction works will sit within a relatively undeveloped and open view it is considered they will have a poor compatibility during the construction stage. In operation the DP would be seen in the context of the KTN NDA which would completely change the view. In this case the compatibility would become fair as the roads would be integrated within a new urban context. Overall the magnitude of change is predicted to be small during construction and operation due to the limited extent of the works that would be visible.													

12A.14 Significance of Visual Impacts

Based on the sensitivity assessment of VSRs as described in **Section 12A.12** and the magnitude of change described in **Section 12A.13**, the potential significance of the unmitigated visual impacts during the construction and operation phases have been calculated in this Section.

Residual impact significance is also determined in this Section, considering the mitigation measures described in full in **Section 12A.9**.

Based on the sensitivity assessment of KTN VSRs and the magnitude of change they might experience, the potential significance of the unmitigated visual impacts from DPs during the construction and operation are provided in **Table 12A.14.1** using the matrix given in the methodology, and taking into account site visits to the area.

Photomontages demonstrating the potential visual impact of the proposed project before and after mitigation from certain VPs are illustrated on **Figure 12.55.1a to 6b**.

Table 12A.14.1 - Significance of visual impacts for KTN DPs 1, 2 3 and 4

VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	VSR Type	VSR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
KVP1a	Highpoint above Pak Shek Au, facing south	District	Recreational	Medium	Intermediate	Small	Moderate	Slight	2, 4, 5, 6, 9 11, 12	2, 9, 11, 12	Slight	Insignificant	Insignificant
KVP1b	Highpoint above Pak Shek Au, facing northeast.	District	Recreational	Medium	Intermediate	Small	Moderate	Slight	2, 4, 5, 6, 7, 9 11, 12	2, 9, 11, 12	Slight	Insignificant	Insignificant
KVP2 (K22)	Ki Lun Shan Footpath	Strategic	Recreational	Medium	Small	Small	Moderate	Slight	2, 4, 5, 6, 7, 9 11, 12	2, 9, 11, 12	Moderate	Slight	Slight
KVP3	Pedestrian bridge over Fanling Highway	Local	Travelling	Low	Intermediate	Small	Slight	Slight	2, 7, 9, 11, 16, 17	2, 9, 11, 12, 17	Slight	Slight	Insignificant
KVP 4 (K18)	Ascot Park Area	Local	Residential - Low Rise	Medium	Small	Small	Moderate	Moderate	2, 9,7,11	2, 9, 11, 12, 17	Moderate	Moderate	Insignificant
KVP5 (K16)	Tai Ping Area High Rise Residential Blocks	District	Residential - High Rise	High	Small	Negligible	Moderate	Insignificant	2, 4, 11, 16, 17	2, 9, 11, 12, 17	Slight	Insignificant	Insignificant
KVP6 (K15)	Choi Po Court / Choi Yuen Estate	District	Residential - High Rise	High	Small	Small	Moderate	Moderate	2, 4, 9, 11, 12	2, 9, 11, 12, 17	Moderate	Moderate	Insignificant
KVP7 (K13)	Industrial Zone northeast of Tsung Pak Long	District	Occupational	Low	Small	Negligible	Slight	Insignificant	2, 4, 11, 16, 17	2, 9, 11, 12, 17	Insignificant	Insignificant	Insignificant
KVP8	Ying Kong Village	Local	Residential	High	Intermediate	Small	Moderate	Moderate	2, 4, 11, 16, 17	2, 9, 11,12, 17	Moderate	Moderate	Insignificant
KVP9 (K6b)	Ho Sheung Heung	Local	Residential - Low Rise	High	Small	Small	Moderate	Moderate	2, 4, 10, 11, 16, 17	2, 9, 10, 11, 12, 17	Slight	Slight	Insignificant

VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	VSR Type	VSR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
KVP10 (K5b north)	Southern Knoll of Fung Kong Shan	District	Recreational (& some Residential & Occupational)	Medium	Small	Small	Slight	Slight	1, 2, 5, 6, 7,11	2, 9, 11, 12,	Slight	Slight	Insignificant
KVP11 (K4)	Cottage Area (Western Range)	Local	Residential - Low Rise	High	Small	Small	Moderate	Moderate	2, 4, 6 11, 12	2, 11, 12,	Slight	Slight	Insignificant

No substantial adverse visual impacts have been identified in relation of DP Package A. The significant visual impacts due to each DP are provided below together with a description of the effectiveness of the recommended mitigation measures.

Generally the level of impact during operation will reduce following the construction stage as the footprint of the construction works area is larger and more visible, including activities taking place therein. VSRs which have elevated panoramic views, such as from residential towers, looking towards the DPs will experience slightly more prolonged impacts due to the difficulty in mitigating visibility from these points and the opportunity of viewing several sites at once. VSRs in very close proximity will also experience slightly more prolonged impacts as development works will occupy a greater proportion of the view and be more visible.

Close hand views experienced by VSRs in the vicinity of KVP9 Ho Sheung Heung would experience moderate adverse visual impacts prior to mitigation as a result of the construction and operation DP3, which would appear directly to the south of the village. This is as a result of the high sensitivity of the VSR and relatively close proximity to the construction area. It is considered that the application of mitigation measures, in particularly screen planting, slope planting and vertical greening on noise barriers would provide the necessary enhancements to assist in visually integrating the DP into the landscape setting and help to break up the appearance of built form. In this case, following the establishment of the mitigation planting at year 10, the impact could be reduced to insignificant.

Elevated views from residential towers experienced by VSRs in the vicinity of KVP6 Choi Po Court / Choi Yuen Estate and low level views from KVP8 Ying Kong Village would experience moderate adverse impacts at the construction stage prior to mitigation due to elevated overview of the construction area possible from these points. The operational impact is predicted to remain at moderate in operation prior to mitigation due to the previously less developed nature of the receiving landscape. In both cases the impact would reduce to insignificant by year 10 of operation once screen planting and road greening will have fully integrated and screened the works.

Elevated views experienced by recreational VSRs will experience moderate adverse impacts during construction and operation in relation to KVP1a Highpoint above Pak Shek Au, facing south and KVP1b Highpoint above Pak Shek Au, facing northeast as these locations all have an elevated view of the DP works areas, albeit the views are less sensitive and experienced differently to residential VSRs. In both cases it is considered that the construction impact can be reduced to slight in the construction stage through screening mitigation. In operation this can be further reduced to insignificant at operation Day 1 through planting and greening measures to replace the tree canopy cover and screen the appearance of new road infrastructure.

Moderate adverse visual impacts during the construction stage would be experienced by residential views from KVP 5 Tai Ping area High Rise

Residential Blocks, prior to mitigation, mainly as they also have a clear overview of the construction area. It is considered the impact would reduce to insignificant post implementation of mitigation during the operational stages as road greening, screen planting and vertical greening of noise barriers which would help to visual integrate the new structures / roadscape into the existing highway corridor setting.

Moderate adverse impacts are predicted in relation to KVP11 Cottage Area (Western Range) where the elevation of the VSR allows for an overview into the construction footprint of the DPs. In this case the construction stage is considered to generate the impacts, as in operation the lower level views would be screened by natural intervening cover. The moderate construction impact prior to mitigation can be reduced to slight through screen planting, road greening and vertical greening measures. In year 10 operation the impacts would be insignificant as the DP would be predominantly screened.

Moderate adverse visual impacts would be experienced by KVP4 Ascot Park Area during construction, prior to mitigation due the proximity of the works area. In operation the impact would remain as moderate due to the large scale noise barriers which would be visible on the near side of the road. It is considered that in addition to this screening provided by the proposed structures, screen planting along the fence alignment, vertical greening and detailed design of the barriers to provide a less visually intrusive appearance would further reduce these impacts to insignificant in by operation year 10.

Slight adverse visual impacts are predicted in relation to KVP3 Pedestrian footbridge over Fanling Highway. The addition of tall noise barrier throughout the road corridor will be highly visible and create the most noticeable visual change albeit with a busy highway corridor with a low visual quality. Measures to improve the visual appearance of the new barriers such as reducing the visual bulk, vertical greening, sympathetic and recessive colours will help to reduce the level of impact. Post implementation of screen planting and road greening mitigation measures, it is considered this impact can be reduced to insignificant by year 10 of operation.

Slight adverse visual impacts are also predicted in relation to KVP10, whilst the scale of these impact is relatively small, the works will appear in a previously less developed landscape. The elevation of the VP allows clearer views of the work area therefore it is difficult to fully mitigate potential impacts. It is considered that these impacts would remain at slight adverse during construction and operation day 1, the would drop to insignificant by operation year 10 whereby screening planting and road greening measures will have matured and taken effect.

Views experienced from KVP7 Industrial Zone northeast of Tsung Pak Long and KVP2 Ki Lun Shan Footpath are predicted to be slight in the construction stages prior to mitigation due to the elevated nature of the view. This level of impact principally relates to the low sensitivity and visual expectation from this VSR. Following mitigation this impact can be reduced to insignificant during the operational stages.

In terms of effectiveness of mitigation measures, it is considered that for visual purposes, improving the appearance of structures (including their placement and land take) together with landscape planting/screening measures can address the visual impacts that will be generated, reducing them to slight or insignificant by operational year 10 or earlier.

In the case of DP Package A, it is considered the potential visual impacts would be acceptable.

12A.15 Conclusion

12A15.1 Landscape Character Areas

The main LCA affected in relation to the development of the Schedule 2 DPs is the Rural and Urban Peripheral Village Landscape (KLCA 2). This LCA is impacted, in part, by the construction and operation of all four of the road schemes within DP Package A, although the majority of these impacts are generated by the alignments of the internal distributor roads DP3 and DP4. The impacts associated with DP1 and DP2 are concentrated within the existing highway corridor. This LCA is predicted to experience slight adverse residual impacts at the construction stage irrespective of the design measures which have been adopted in the revised RODP (see **Section 12A.2.1**) and the recommended construction and operation mitigation measures including tree protection, preservation and transplantation; compensatory planting, compensatory woodland planting; road greening and general good site practice. It is anticipated that the impact significance would reduce to insignificant at year 10 when compensatory planting achieves its full potential.

Moderate adverse impacts are predicted for KLCA 1 prior to mitigation due to the interference of natural topography and vegetation as a result of embankment construction and road verges. Given the limited extent of the works on the fringes of the LCA, it is considered careful design of the proposed engineered slopes, protection of vegetation and replanting of slopes can reduce the impact to slight in construction post mitigation and operation day 1. By year 10 establishment of slope planting measures would have reduced the impact to insignificant.

Slight adverse impacts are anticipated in relation to KLCA 2 Rural and Urban Peripheral Village Landscape during construction, prior to mitigation. It is considered that residual impacts in construction and day 1 operation can be mitigated to slight levels through tree preservation, transplantation and compensatory planting given the relatively small areas concerned. Impacts to KLCA 2 would reduce to insignificant during operation (year 10) as compensatory planting will have fully established and reached a level of maturity.

In relation to KLCA 5, the overall loss of agricultural land influences the rural character of the landscape; directly compensating for the loss of this resource

is limited by local land availability, demand and suitability. As a result it is considered the residual impact post mitigation will remain unchanged.

Slight adverse impacts are predicted in construction for KLCA 6 Major Transportation Corridor Landscape due to scale of the construction footprint. This would involve extensive excavation, ground works, reconfiguration works and felling of plantation trees which currently line the road (both sides would be affected). During construction, measures to protect the planting resources, transplant trees where feasible together with provision of compensatory planting are considered to have the capacity to address these impacts. Following application of mitigation this impact can be reduced to slight during construction; impacts will be insignificant in the operational stage as the development would be broadly retained with the existing major infrastructure corridor.

KLCA 4 Industrial landscape and KLCA 7 Major Water Course Corridor Landscape will experience insignificant impacts during both construction and operation due to the existing low quality character and degraded nature of these areas and no direct impact on rivers.

12A15.2 Landscape Resources

No substantial adverse impacts have been identified in relation to DP Package A.

Prior to mitigation moderate adverse impacts are predicted at the construction and operational stage for KLR 6.1 Ki Lun Shan Hillside Woodland and 6.3 Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong due to high sensitivity of the resource and overall likely scale of felling and earthworks required in order to complete road construction. To avoid damaging a larger proportion of this LR than necessary, minimising the topographical change required to construct the road will limit the level of the impact. In unison, protection and retention of existing trees wherever feasible, combined with tree transplantation, slope landscaping of retaining slopes/embankments and woodland compensatory planting will further reduce the level of impact. It is considered that, post application of mitigation measures, the residual impact significance would remain at moderate during construction and operation (day 1). By year 10 of operation the compensatory planting and slope enhancement will have fully established and reached a level of maturity which would reduce the residual impact to slight.

Moderate adverse impacts are predicted at the construction and operational stage, prior to mitigation at KLR10.2 Sheung Shui Community Sports as the proposed works will require a lot of changes to this area, removing some mature vegetation and requiring demolition works. Mitigation work will primarily focus on replacement of lost trees within the immediate area whereas mitigation for the loss of Open Space will be re-provisioned within the wider NDA development. These combined measure are considered adequate to bring the residual impact to insignificant by year 10.

Moderate adverse impacts are predicted at the construction and operational stages for KLR3.1 Ho Sheung Heung Ponds prior to mitigation, albeit the majority of the loss of this LR will be as a result of the Schedule 3 works. Although some of the ponds in these areas are permanently lost without direct replacement, the conservation and enhancement of the LVNP will ensure the retention and provision of ponds in this area. In addition one principle of planning the new RODP is to incorporate some new ponds, for example the Fung Kong Shan Park in E1-7 will incorporate a pond. Although this will not directly compensate for the loss of ponds, it will help to alleviate the impact. Therefore although some ponds are irreversibly lost, at construction and operation day 1 the residual impact significance is considered to reduce to slight, and by year 10 when any ponds in the RODP have had time to establish and the enhanced ponds in the LVNP have had time to confer a positive effect, the residual impact will be insignificant.

At the construction and operational stages, prior to mitigation, moderate adverse impacts will be experienced by KLR 7.3 Lowland Woodland in Pak Shek Au and Tong Kok as a result of felling of trees within this valuable resource. Compensation space will be provided within the road verges, reinstated work areas and within the highway corridor of DP. In this case, moderate impacts will still be experienced post mitigation at the construction operational stages as compensation planting will not have fully established. By operation year 10, this impact will drop to slight as woodland planting matures.

Moderate adverse impacts are predicted at the construction stage at KLR 12.9 Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang prior to mitigation works. This is as a result of the large area that will be impacted within the LR, involving tree felling, earthworks and demolition of buildings. The mitigation in this regard focuses on retention, transplantation and compensation of woodland planting where this has been impacted upon. It is considered, with the mitigation measures suggested this impact can be reduced to slight during construction and eventually to insignificant by year 10, as planting matures are begins to provide sufficient compensation.

KLR 2.1 Streams in Kwu Tung are predicted to experience moderate adverse impacts at construction prior to mitigation. This is as a result of disturbance of this LR, albeit in limited extent, due to the Schedule 2 works.

Moderate adverse residual impacts are predicted in the construction stage as the impact on the LR cannot be fully mitigated however, the area affected by the DP works is limited and where retention of the stream is possible then culverting work will be implemented to form crossing points allowing retention of the stream. In this case the operational impact would reduce to slight in operation day 1 and year 10.

It is predicted that moderate adverse impacts would be generated prior to mitigation in relation KLR 9.1 Long Valley Agricultural Land and due to the loss of a small piece of this valuable and sensitive landscape. Careful planning of the revised RODP means most of the agricultural land in Long Valley and Ho

Sheung Heung will not be affected. Large areas of other agricultural LRs, however, will be affected and permanently lost, mainly due to the Schedule 3 works. There is no direct compensation for the agricultural land lost but direct mitigation includes the possible preservation and protection of any trees in such LRs and where unavoidably affected, transplantation or compensatory planting which will only mitigate the impact very slightly. The loss of agricultural land has been carefully studied for this Project however; the setup of the LVNP and preservation and even enhancement of agricultural land in that area, as well as zoning of large sites C2-2 and C1-6 to the north and south of LVNP as agricultural land, is considered to go some way to help alleviate impacts on this LR. In addition, this broad agricultural land category (LR9) encompasses both active and abandoned agricultural land including orchard areas. According to a further review and site inspection in December 2012/January 2013 by the PlanD with AFCD assistance, the amount of active agricultural land affected by the Project in KTN NDA is approximately 4 ha. According to the AFCD Annual Report 2011-2012, currently, there are 4,071 ha of abandoned agricultural land in Hong Kong and 734 ha of active agricultural farmland and as such, the affected agricultural land only represents a small percentage of active agriculture land in Hong Kong. In the surrounding areas of the Project, 160 ha of land have been found potentially suitable for agricultural rehabilitation/re-site in the above mentioned site inspection. The major cluster (34 ha) is found at Kwu Tung South. Since there is no direct mitigation for the loss of agricultural land, the significance of impact on this LR will remain the same before and after mitigation.

Moderate adverse impacts are predicted during the construction stage in relation to KLR14.1 Fanling Highway and nearby associated roads due to sheer scale of the construction works that will occur within the highway corridor. This would involve extensive excavation, ground works, reconfigurations works and felling of plantation trees which currently line the road (both sides would be affected). During construction, measures to protect existing tree and transplant trees, where feasible, together with provision of compensatory planting is considered to have the capacity to reduce the impacts to slight during construction and eventually insignificant in the operational stage once planting has established and matured.

Moderate adverse impacts are also predicted during construction prior to mitigation in relation to KLR 5.4 Old and Valuable Trees (OVT) Castle Peak Road, as these will sit directly within a major construction site and highway works will be reconfigured around them. In this case mitigation measures applied to protect the trees during the construction stage will reduce the impact to insignificant. In operation the impact will be insignificant as the trees will be retained within a new and widened landscape median in the centre of the road.

Moderate adverse impacts during construction are predicted for LR5.1 Plantation South of Fanling Highway as construction works for the realignment of Kwu Tung Road will require the felling of trees. This plantation forms the roadside planting on embankment and will be compensated like for like. In this

case the impact can be mitigated to insignificant by year ten as replacement planting would directly compensate for the loss of trees.

The remaining LRs will all experience a slight or insignificant impact at the construction and operational stages.

12A15.3 Visual Impact

In summary, no substantial adverse impacts have been identified in relation to DP Package A.

In comparison to the level of visual impact experienced by VSRs in FLN associated with the DP8 Po Shek Wu Interchanges and DP9 &10 Fanling Bypass Works, visual impact in KTN are generally less severe. This is as a result of several factors. In terms of high sensitivity residential VSRs, in KTN these are generally at lower levels (2-3 storey village type housing) with less extensive views of the proposed development or in high rise residential towers with a more strategic overview of the development. In the latter case, these broad panoramic views encompass a huge area whereby the proposed development works would only form a small component. The same is true in relation to high sensitivity recreational views from local prominences such as Ki Lun Shan (KVP2) in that the development forms a very small part of a very large landscape view. The proposed road works are also mainly constructed at-grade which results in them being less conspicuous in the landscape and provides for easy integration of visual mitigation measures such as screen planting, vertical green or road greening.

Generally the level of impact during operation will reduce following the construction stage as the footprint of the construction works area is larger and more visible, including activities taking place therein. VSRs which have elevated panoramic views, such as from residential towers, looking towards the DPs will experience slightly more prolonged impacts due to the difficulty in mitigating visibility from these points and the opportunity of viewing several sites at once. VSRs in very close proximity will also experience slightly more prolonged impacts as development works will occupy a greater proportion of the view and be more visible.

Close hand views experienced by VSRs in the vicinity of KVP9 Ho Sheung Heung would experience moderate adverse visual impacts prior to mitigation as a result of the construction and operation DP3, which would appear directly to the south of the village. This is as a result of the high sensitivity of the VSR and relatively close proximity to the construction area. It is considered that the application of mitigation measures, in particularly screen planting, slope planting and vertical greening on noise barriers would provide the necessary enhancements to assist in visually integrating the DP into the landscape setting and help to break up the appearance of built form. In this case, following the establishment of the mitigation planting at year 10, the impact could be reduced to insignificant.

Elevated views from residential towers experienced by VSRs in the vicinity of KVP6 Choi Po Court / Choi Yuen Estate and low level views from KVP8 Ying Kong Village would experience moderate adverse impacts at the construction stage prior to mitigation due to elevated overview of the construction area possible from these points. The operational impact is predicted to remain at moderate in operation prior to mitigation due to the previously less developed nature of the receiving landscape. In both cases the impact would reduce to insignificant by year 10 of operation once screen planting and road greening will have fully integrated and screened the works.

Elevated views experienced by recreational VSRs will experience moderate adverse impacts during construction and operation in relation to KVP1a Highpoint above Pak Shek Au, facing south and KVP1b Highpoint above Pak Shek Au, facing northeast as these locations all have an elevated view of the DP works areas, albeit the views are less sensitive and experienced differently to residential VSRs. In both cases it is considered that the construction impact can be reduced to slight in the construction stage through screening mitigation. In operation this can be further reduced to insignificant at operation Day 1 through planting and greening measures to replace the tree canopy cover and screen the appearance of new road infrastructure.

Moderate adverse visual impacts during the construction stage would be experienced by residential views from KVP 5 Tai Ping area High Rise Residential Blocks, prior to mitigation, mainly as they also have a clear overview of the construction area. As the overall visibility of the scheme and construction works would be set within the existing road corridor the impact would reduce to insignificant prior to any mitigation measures being applied. It is considered the impact would reduce to insignificant post implementation of mitigation during the operational stages as road greening, screen planting and vertical greening of noise barriers which would help to visual integrate the new structures / roadscape into the existing highway corridor setting.

Moderate adverse impacts are predicted in relation to KVP11 Cottage Area (Western Range) where the elevation of the VSR allows for an overview into the construction footprint of the DPs. In this case the construction stage is considered to generate the impacts, as in operation the lower level views would be screened by natural intervening cover. The moderate construction impact prior to mitigation can be reduced to slight through screen planting, road greening and vertical greening measures. In year 10 operation the impacts would be insignificant as the DP would be predominantly screened.

Moderate adverse visual impacts would be experienced by KVP4 Ascot Park Area during construction, prior to mitigation due the proximity of the works area. In operation the impact would remain as moderate due to the large scale noise barriers which would be visible on the near side of the road. It is considered that in addition to this screening provided by the proposed structures, screen planting along the fence alignment, vertical greening and detailed design of the barriers to provide a less visually intrusive appearance would further reduce these impacts to insignificant in by operation year 10.

Elevated views experienced by recreational VSR will experience moderate adverse impacts during construction in relation to KVP2 Ki Lun Shan Footpath, albeit the view is less sensitive and experienced differently to residential VSRs. It is considered that the construction impact can be reduced to slight in the construction stage through screening mitigation. In operation this can be further reduced to slight by year 10 of operation through planting and greening measures to replace the tree canopy cover and screen the appearance of road infrastructure. Slight adverse visual impacts are predicted in relation to KVP3 Pedestrian footbridge over Fanling Highway. The addition of tall noise barrier throughout the road corridor will be highly visible and create the most noticeable visual change albeit with a busy highway corridor with a low visual quality. Measures to improve the visual appearance of the new barriers such as reducing the visual bulk, vertical greening, sympathetic and recessive colours will help to reduce the level of impact. Post implementation of screen planting and road greening mitigation measures, it is considered this impact can be reduced to insignificant by year 10 of operation.

Slight adverse visual impacts are also predicted in relation to KVP10, whilst the scale of these impact is relatively small, the works will appear in a previously less developed landscape. The elevation of the VP allows clearer views of the work area therefore it is difficult to fully mitigate potential impacts. It is considered that these impacts would remain at slight adverse during construction and operation day 1, the would drop to insignificant by operation year 10 whereby screening planting and road greening measures will have matured and taken effect.

Views experienced from KVP7 Industrial Zone northeast of Tsung Pak Long and KVP2 Ki Lun Shan Footpath are predicted to be slight in the construction stages prior to mitigation due to the elevated nature of the view. This level of impact principally relates to the low sensitivity and visual expectation from this VSR. Following mitigation this impact can be reduced to insignificant during the operational stages.

In terms of effectiveness of mitigation measures, it is considered that for visual purposes, improving the appearance of structures (including their placement and land take) together with landscape planting/screening measures can address the visual impacts that will be generated, reducing them to slight or insignificant by operational year 10 or earlier.

12A15.4 Cumulative impacts

12A15.5 KTN NDA

The assessment of impacts in relation to LR and LCAs in this section has considered the construction of the Schedule 2 DPs in isolation so that it is possible to identify and quantify their specific influences and contributions to potential landscape and visual impacts within the wider NDA project. In general the construction footprint of the Schedule 2 DPs is significantly smaller than the Schedule 3 components and the associated impacts on LR and

LCAs are also far smaller. When considered together the impact of the Schedule 2 projects would not alter the outcome of the Schedule 3 assessment as this has taken into the account the same LR/LCAs within broadly the same study area. It is only on the periphery of the urban area where the Schedule 2 DPs exert an impact on LR and LCAs beyond the construction footprint of the Schedule 3 works such as to the south of the Fanling Highway. In this case the additional impact, providing mitigation measures are implemented, would prove to be insignificant.

In terms of visual impact, the majority of the DPs will be integrated directly within or around the KTN NDA therefore, will be entirely screened from external views in operation stage. The road infrastructure will appear visually compatible with the new urban development, which will be a far more dominant visual component than the road formation. Elements of DP1 and DP3 where they appear on the periphery of the new development are likely to exert some additional visual pressure on local VSRs, in particular those which experience vistas along the highway. For example, the interchange works constructed over the Fanling Highway, noise barrier structures are likely to be highly visible, especially from elevated viewpoints. However, it is considered that as these works are focused around the existing major infrastructure corridor, and are significantly lower in height, that these would not generate any further adverse impacts.

12A15.6 Agreement No. CE38/2010(CE) Planning Study on Liantang/Heung Yuen Wai Cross-boundary Control Point and its Associated Connecting Roads in Hong Kong – Feasibility Study.

A new Boundary Control Point (BCP) is proposed to be constructed at Liantang/Heung Yuen Wai together with its connecting roads and other associated works. This project is remote from these specific DPs and therefore would not generate any additional impact.

12A15.7 Agreement No. CE53/2008(CE) Planning and Engineering Study on Development of Lok Ma Chau Loop - Investigation

The LMC Loop eastern connection road lies outside the study area of KTN NDA; this will link to DP 4 (KTN NDA Road D1 to D5) distributor road south of Ma Tso Lung. This road would basically comprise a continuation of the DP4 works further to the north. If the construction period of the LMC section of the road is concurrent with the DP4 then it is likely the overall construction impact would increase due to the larger footprint. Otherwise it is considered that this would not generate any further impacts.

12A15.8 Widening of Tolo Highway/ Fanling Highway between Island House Interchange and Fanling (Stage 2)

This project will interface with DP1 Fanling Bypass Eastern section to the south east of Fanling. The tentative completion date of the project is from Yr 2015 to Yr 2018 but is still under review by HyD. It is considered that the cumulative impact, should the two projects run concurrently, would not generate any significantly adverse impacts as they would both be contained within the highway corridor and could be managed to reduce impacts through the implementation of mitigation measures.

12A15.9 Construction of cycle tracks and the associated supporting facilities from Sha Po Tsuen to Shek Sheung River.

This project will interface with DP1 San Tin Highway and Fanling Highway Kwu Tung Section Widening and DP2 Castle Peak Road Diversion as it passes to the south of the KTN NDA. It is considered that these cycleway would be highly compatible with the DP works and that no significant negative impacts would be generated.

12A15.10 Overall Conclusion

Landscape and visual mitigation works in relation to these DP during the construction stage rely heavily on the minimisation of the footprint of the works area, avoidance of significant topographical changes together with the retention, protection and compensatory planting of trees / vegetation. These measures if deployed have the capacity to reduce the level of residual impact experienced by the VSRs, LRs and LCAs at the construction stage.

It is not possible to fully mitigate all impacts in relation to loss of mature woodland or tree planting, including the visual amenity/ screening they provide, for all VSRs, LRs and LCAs in the construction period and early operational stage, mainly as long periods of time are required to sufficiently compensate for the associated impacts. Providing compensatory measures are applied, in combination with transplantation of existing trees (which can help to accelerate the establishment period), the impacts to VSRs and LRs affected by these DPs can be reduced to slight or insignificant levels relatively quickly. Road greening measures such as use of climbing plants and verge planting help to break up the uniformity of new road formation and associated structures (such as footbridges), when used in combination with wider screening measures they help to reduce the visual impacts in the early operational stages until tree screens have established and matured.

On review of the likely residual impacts and possibility to reduce all to slight or insignificant level by operational year 10, it is considered that DPs 1, 2, 3 and 4 would be acceptable in terms of landscape and visual impacts.

12B DP Package B

12B.1 KTN Schedule 2 DP 5 (Package B)

This section reports on the Study to assess the potential landscape and visual impacts arising from construction and operation of any above ground structures and works areas associated with the Schedule 2 DP 5 only. Please refer to **Table 12.16.2** for details of how each package has been divided.

The components of DP Package B are summarised in **Table 12B.1.1** below.

Table 12B.1.1 - Schedule 2 DP Package B

DP Package B			
5	New Sewage Pumping Stations (SPS) in KTN NDA	F3	<p>A sewage pumping station---(b) with an installed capacity of more than 2000 m³ per day and a boundary of which is less than 150 m from an existing or planned residential area or educational institution.</p> <p>2no. SPS are proposed in KTN, these are:</p> <p>SPS south of Ma Tso Lung.</p> <p>SPS south of Ho Sheung Heung.</p>

12B.2 Review of Planning and Development Control Framework

This section provides an overview of the HKSAR Government's development intentions, statutory land-use and planning within the Study Areas, specifically from landscape and visual standpoints. It considers relevant, published studies, such as HK2030 Study, OZPs, and DPA mapping. This information has been considered in relation to the relevant revised RODP of the NDAs and their Layout Plans with the aim of assessing whether the DP can fit into the surrounding setting.

12B.2.1 Design measures adopted within the Schedule 2 Designated Projects

The Schedule 2 DPs form the key infrastructure developments to support the future development and population growth within the KTN and FLN NDAs. KTN and FLN NDAs will provide a mix of housing types as well as basic infrastructure and community facilities. The development opportunities and constraints of the Schedule 2 DPs are presented in **Section 2.4.1**, these have informed the development and consideration of alternative infrastructure options. A summary of the key design rationale for each project is provided below:

DP 5 - New sewage pumping stations (SPS) in KTN NDA

Two SPS are proposed in KTN NDA to convey the sewage flows from KTN NDA to Shek Wu Hui Sewage Treatment Works for treatment and its disposal,

details on their operational requirements are presented in **Section 2.4.2.5**. The SPS south of Ma Tso Lung has been positioned to serve development proposals in this area. A site close to proposed road access and other built development has been selected so that built form is integrated together. The internal layout and configuration of the structure has been rationalised to minimise land take. Generally these buildings follow a standard format, that is, an external solid perimeter wall (approx. 3m high), internal access road with turning head and 5m high pumping station building enclosing the pumping plant. The buildings are rectangular single storey with a flat roof.

A second SPS south of Ho Sheung Heung is positioned close to the Sheung Yue River. The layout and footprint has been set back from the river frontage to reduce the visibility and retain the connectivity of riverside access paths. The internal layout and configuration of the structure has been rationalised to minimise land take. The structure is also located, where operationally feasible, close to or integrated within the proposed NDA development to avoid visual clutter.

Existing Outline Zoning Plans (OZPs)

The review of the OZPs has included a review of the Plans as well as the accompanying Notes and Explanatory Statements. The DP sites and study areas have been superimposed onto existing OZPs and DPA Plans to determine the potential influence on the existing zoning. The study area and site boundaries for the DP 5 sites are presented on **Figure 12.50.2**.

Kwu Tung North (KTN) NDA

The KTN DP 5 study areas are covered by the following OZP/DPA documents:

- Approved Kwu Tung North OZP No. S/NE-KTN/8.
- Draft Kwu Tung South OZP No. S/NE-KTS/13
- Approved Ma Tso Lung and Hoo Hok Wai Development Permission Area Plan No. DPA/NE-MTL/2.

Table 12B.2.1 summarises the areas of existing zoning types which will be directly affected by the site boundary of each DP.

Table 12B.2.1 Schedule 2 Designated Project 5

Zoning Type	OZP/DPA number and extent of zoning within the site boundary that will undergo change (ha)	Comments on Major land use changes
DP5 – New Sewage Pumping Stations		
Agriculture (AGR)	S/NE-KTN/8 0.266 DPA/NE-MTL/2 0.277	Approximately 0.266ha of this zoning type will be modified to construct the KTN southern SPS located to the south of Ho Sheung Heung. Approximately 0.277ha will be modified to form the northern SPS south of Ma Tso Lung.

Summary of land use changes

In the case of both SPS, these are located on land currently zoned as Agriculture which would be lost as a result of their construction, this amounts to approximately 0.543ha.

12B.3 Landscape Baseline Conditions

The methodology for Landscape Impact Assessment is presented in **Section 12.18**.

According to the Study Brief (ESB-176/2008) baseline review comprises the identification of all existing Landscape Resources (LR) and Landscape Character Areas (LCA) within 500m of the DP boundary.

The overall Study Area for all the DP is generally natural and rural. Complex LRs can be classified into different major categories, as follows:

- LR1 – Channelised Water Course
- LR2 – Water Course
- LR3 – Water Pond
- LR4 – Marsh/ Wetland
- LR5 - Plantation
- LR6 – Hillside Woodland
- LR7 – Lowland Woodland
- LR8 – Shrubland / Grassland Mosaic
- LR9 – Agricultural Land
- LR12 – Rural Development Area
- LR13 – Industrial / Open Storage
- LR14 – Major Transportation Corridor

The LCAs are classified as follows:

- LCA1 Natural Hillside Landscape
- LCA2 Rural and Urban Peripheral Village Landscape
- LCA4 Industrial Landscape
- LCA5 Lowland Agricultural Landscape
- LCA6 Major Transportation Corridor Landscape
- LCA7 Major Water Course Corridor Landscape

The landscape resources and landscape character areas of each NDA are described in further detail below, together with their sensitivity.

12B.3.1 Broad Brush Tree Survey

A broad brush tree survey has been carried out within the study area which estimates that around 10 trees will be affected by the proposed development. Major tree species included within the wider study area include *Acacia confusa*, *Acacia auriculiformis*, *Araucaria heterophylla*, *Bauhinia blakeana*, *Bombax ceiba*, *Cassia siamea*, *Celtis sinensis*, *Cinnamomum camphora*,

Clausena lansium, *Citrus maxima*, *Dimocarpus longan*, *Eucalyptus camaldulensis*, *Ficus virens*, *Ficus microcarpa*, *Litchi chinensis*, *Leucaena leucocephala*, *Macaranga tanarius*, *Mangifera indica*, and *Melaleuca quinquenervia*. Many trees are found in the foothills of the natural upland, as well as the rural fringe in between different villages and they are generally mature.

A detailed Tree Felling Application process will be carried out at a later detailed design stage, to finalise tree treatment and allocate compensatory planting areas including available open space, parks and streetscape.

A single (OVTs) is found within the Study Area of the SPS south of Ho Sheung Heung (ref. No. LCSD/ N45), its location is illustrated on **Figure 12.51.12**.

12B.3.2 Schedule 2 DPs 5 Baseline Landscape Resources (LRs) and Landscape Character Areas

The baseline LRs and LCAs of KTN DP 5 are detailed along with their sensitivity in **Table 12B.3.1 and 12B.3.2**; figures presenting this information are set out below:

Figure 12.51.2 LRs for DP 5.

Figure 12.51.11 and 12 LRs for DP 5 enlarged versions.

Figure 12.51.42 to 46 Representative images of LRs for DP 5.

Figure 12.52.2 LCAs for DP 5.

Figure 12.52.7 to 8 Representative images of LCAs for DP5.

Table 12B.3.1 - Landscape Resources and their Sensitivity- KTN NDA (DP5)

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLR 1 – Channelised Water Course					
Refers to modified water courses channelised with concrete or grasscrete, or with gabion-fortified banks, or water courses undergoing such channelisation. This LR includes both large channelised river water courses as well as some much smaller concrete lined water courses associated with agricultural land. This LR also includes some walkways along the larger water course and the vegetation associated with the water course, both within the channel and along the banks as well as the ridge of the banks. The vegetation mainly consists of grasses and shrubs, but also includes trees in some areas as detailed further in the individual LR descriptions. Within the Study Area this LR includes a section of Sheung Yue River. This LR is a prominent feature within the landscape.					
1.3	Sheung Yue River	Medium	Medium	Medium	Medium
Shek Sheung River collects water from the south and flows north, joining Sheung Yue River west of Sheung Shui Slaughter House. There is also a branch that splits from Ng Tung River and flows round the Shek Wu Hui Sewage Treatment Works to the south but this is mainly dry and a flood protection measure. This LR is mainly a grasscrete lined, trapezoidal channel, formed for the purpose of flood protection in Kwu Tung and Fanling areas. Water partially dries out during the dry season and there are small water channels at the base of the channel when water flow is low, with grass on either side. This river is reasonably capable of accommodating change and its sensitivity is considered to be medium .					
1.4	Water Course Network in Long Valley	Medium	Low	High	Medium
This LR sits outside the works area and will not be affected. This LR describes a network of waterways in the Long Valley area which eventually connect and flow into a box culvert near the Kwu Tung Road junction with Castle Peak Road. The watercourses are mainly vertically-sided concrete channels constructed for irrigation purposes with limited vegetation. The riparian vegetation that does exist comprises common and widespread herb species. This LR has a reasonable ability to accommodate change, being a man-made network of water channels, but overall it is vital to the Long Valley agricultural area for irrigation and its sensitivity is considered to be medium .					
KLR 2 – Water Course					
Refers to natural or semi-natural water courses, including short sections with concreted banks. This LR also includes vegetation associated with the water course, both within the streams and along the banks as well as in the immediate vicinity. The vegetation mainly consists of grasses and shrubs, but also includes trees in some areas such as the upland streams, as detailed further in the individual LR descriptions. The vegetation often provides a subtle transition between this LR and its surrounding LR(s). Within the Study Area this LR includes watercourses running between different rural areas and villages, incorporating streams running off Ma Tso Lung and around Kwu Tung itself.					
2.1	Natural Streams in Kwu Tung	Medium	Medium	Medium	Medium
This LR sits outside the works area and will not be affected. These streams, connecting with the Sheung Yue River, are located centrally within the Study Area. They pass through villages including Fung Kong, Tung Fong, Tong Kok, Shek Tsai Leng and south of Ho Sheung Heung. The upstream section is natural but has been degraded by pollution, with seasonal flows and heavily vegetated stream banks, overgrown with common grass species such as Bidens alba and Pennisetum spp. Other sections of these streams are fortified by concrete banks with grey water flowing. This LR is relatively intolerant to change and its sensitivity is considered to be Medium .					
2.4	Natural Streams at Ma Tso Lung	High	Medium	Low	High
This LR sits outside the works area and will not be affected. This LR describes natural streams running off Ma Tso Lung to the lowland area in Ma Tso Lung San Tsuen in the northwest of KTN NDA Study Area. Riparian plants included fruit trees (i.e. Dimocarpus longan and Litchi chinensis) and native understory species (e.g. Lophatherm gracile and Alocasia odora) and the vegetation near the streams is dominated by the exotic climber species Mikania micrantha and herb species Bidens alba and Alocasia macrorrhizos. The section at Ma Tso Lung is regarded as ecologically important due to its naturalness and well developed bank area. This LR is relatively intolerant to change and its sensitivity is considered to be high .					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLR 3 – Water Pond					
Refers to freshwater ponds. The ponds are often associated with agricultural land and used for irrigation, and punctuate the traditional field pattern. Some ponds are also found near residential or developed areas and have aesthetic, landscape value and some are fish ponds. This LR also includes vegetation associated with the ponds, both within and around the banks as well as in the immediate vicinity. The vegetation mainly consists of grasses and shrubs, with scarce trees. The main locations of these water ponds within the Study Area of KTN NDA (DP3 & 4) include both foothill and lowland areas and are most concentrated in Ho Sheung Heung, Long Valley and the Closed Area.					
3.1	Ho Sheung Heung Water Ponds	Medium	Medium	Low	High
This LR sits outside the works area and will not be affected. This LR is located within Ho Sheung Heung agricultural land and is a relatively large continuous area of water ponds within the Study Area. These ponds retain water most of the time including both the dry and wet seasons. The bunds of these ponds are vegetated by grasses and low shrubs, as well as some fruit trees such as <i>Musa x paradisiaca</i> , <i>Litchi chinensis</i> , <i>Mangifera indica</i> , <i>Dimocarpus longan</i> and <i>Citrus maxima</i> . The ponds in this area are of medium quality with common fruit trees and are relatively intolerant to change. The sensitivity of this LR is considered to be high .					
3.2	Long Valley Water Pond	Medium	Medium	Low	High
This LR sits outside the works area and will not be affected. This LR is located within Long Valley agricultural land. Water in the ponds is usually full in wet season and periodically pumped out by local farmers for irrigation and management purposes during dry season. Grasses grow along their banks and provide a subtle transition between this LR and its surrounding agricultural land. These ponds are relatively intolerant to change and their sensitivity is considered to be high .					
3.8	Water Ponds within the Closed Area	Medium	Medium	Low	High
This LR sits outside the works area and will not be affected. Part of the Study Area lies within the Closed Area and the water ponds of this LR within the Study Area are located just north of Ma Tso Lung. The ponds are small and generally overgrown and abandoned, but are associated with agricultural land. This LR is relatively intolerant to change and its sensitivity is considered to be high .					
KLR 4 – Marsh/ Wetland					
Refers to freshwater marsh/ wetland landscape resources, often found at old river meanders which have been truncated during river channelization and retraining, overgrown with herbaceous vegetation and often with some areas of seasonal or permanent open water. This LR also includes wetland areas along natural streams around Ma Tso Lung as well as areas that were once ponds but have not been actively managed for a long time. Within the Study Area, this LR is found in Long Valley, along the channelized water courses as well as in the north around Ma Tso Lung.					
4.1	Marshes in Long Valley	Medium	High	Low	High
This LR sits outside the works area and will not be affected. This LR is generally located in the middle of Long Valley agricultural land, including both permanent wet marshes and well vegetated marshes. For the permanent wet marshes, they used to be fish ponds or irrigation ponds and have been abandoned and inactively managed. Densely emergent vegetation is present in these marshes and shows relatively high diversity. Tree species include <i>Phragmites karka</i> , sedges <i>Cyperus iria</i> and <i>Kyllinga aromatica</i> , and herbs and climbers such as <i>Ipomoea aquatica</i> , <i>Polygonum barbatum</i> and <i>Polygonum lapathifolium</i> . For the well vegetated marshes, a large portion of the wetland area is covered with rich and moist topsoil, colonised by common and widespread species such as <i>Brachiaria mutica</i> , <i>Panicum maximum</i> , <i>Bidens alba</i> , <i>Ludwigia perennis</i> and the Common Wetland Fern <i>Cyclosorus interruptus</i> . This LR is fairly rare and is relatively intolerant to change and its sensitivity is considered to be high .					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
4.2	Mitigation Wetland	Medium	High	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>Several plots of marsh are located along the Sheung Yue River that borders the Long Valley agricultural land. They were formerly meanders of the river and were isolated during the river channelisation. To mitigate the ecological impact resulting from channelisation, these areas are now managed by a government department to provide marsh habitat, mainly for wetland dependent wildlife. As part of the habitat management, wetland plants and riparian vegetation have been planted. These plants include <i>Commelina diffusa</i>, <i>Hedychium coronarium</i>, <i>Ludwigia perennis</i> and <i>Nelumbo nucifera</i>. Bamboos and trees are also planted along the bunds, e.g. <i>Acacia auriculiformis</i>, <i>Cinnamomum camphora</i>, <i>Hibiscus tiliaceus</i> and <i>Ilex rotunda</i>.</p> <p>Mitigation habitats are fairly rare in Hong Kong and additionally, this LR is relatively intolerant to change. Its sensitivity is considered to be high.</p>					
KLR-4.3	Wetland/ Marsh in the Closed Area	Medium	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>The area of this LR along the natural stream in northern Ma Tso Lung appears to have evolved from agricultural land that has been abandoned for a long time and is influenced by the water course, such that the land is mainly wet underfoot. The wetland vegetation is dominated by the exotic grass <i>Brachiaria mutica</i> and creeper <i>Ipomoea cairica</i> as well as native herbs including <i>Commelina diffusa</i>, <i>Colocasia esculenta</i>, <i>Cyclosorus interruptus</i>, <i>Ludwigia perennis</i> and <i>Pennisetum purpureum</i>. Riparian vegetation is dominated by the exotic climber species <i>Mikania micrantha</i> and herb species <i>Bidens alba</i> and <i>Alocasia macrorhizos</i>. Abandoned ponds north of Ma Tso Lung, likely previously used as fish ponds or for irrigation purposes have been abandoned for a long time and now have dense emergent vegetation present in them such that they are considered marshes. They include vegetation such as exotic wetland species such as <i>Brachiaria mutica</i> and <i>Sesbania cannabina</i> and the invasive exotic tree species <i>Leucaena leucocephala</i> but also support some native wetland herb species including <i>Polygonum japonicum</i>, <i>Commelina diffusa</i> and <i>Ludwigia octovalvis</i>.</p> <p>This LR is relatively intolerant to change due to the succession of vegetation and the natural sensitivity of wetland/marsh. Its sensitivity is considered to be high.</p>					
<p>KLR 5 Plantation</p> <p>Refers to medium sized and larger clusters of trees that have been planted and are distinct from natural woodland since they have been planted by man. Common tree species in this LR include native (<i>Ficus microcarpa</i>, <i>Celtis sinensis</i>, <i>Cinnamomum camphora</i> and <i>Macaranga tanarius</i>) and exotic species (<i>Acacia confusa</i>, <i>Casuarina equisetifolia</i> and <i>Melaleuca quinquenervia</i>) and further details are given in the individual LR descriptions.</p> <p>Within the Study Area of KTN NDA (DP 5) this LR includes a single OVT, reference no. LCSD/ N45 located on Castle Peak Road, the trees species is <i>Melaleuca quinquenervia</i>.</p>					
5.4	Old and Valuable Trees (OVT) Castle Peak Road	High	High	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>5no. Old and Valuable Trees (OVTs) are located within KTN along Castle Peak Road, a <u>single</u> OVT (reference number LCSD N/45) sits within the study area of DP5. The tree species is <i>Melaleuca cajuputi subsp. Cumingiana</i>, 18m high with a crown spread of 13m. The tree sits within the narrow verge between castle peak road and the Fanling Highway surrounded by road surfacing.</p> <p>This LR has a low capacity to accommodate change and its sensitivity is considered to be high.</p>					
<p>KLR 6 – Hillside Woodland</p> <p>Refers to woodland areas largely scattered over hillsides, including at the base of hills. This LR is predominantly composed of native tree species and is generally located some distance from human activities (and hence disturbance), growing naturally with some understorey vegetation. It can include areas of Fung Shui Woodland growing in hillsides in the vicinity of village. Common tree species in this LR include <i>Macaranga tanarius</i>, <i>Leucaena leucocephala</i>, <i>Celtis sinensis</i> and <i>Ficus microcarpa</i>. Further details are given in the individual LR descriptions.</p> <p>Within the Study Area of the KTN NDA (DP5), this LR is found at the hillsides of Ma Tso Lung and northwest of Ho Sheung Heung.</p>					
6.3	Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong	High	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to the narrow, winding and largely continuous patches of woodland in the hillside areas of Ma Tso Lung San Tsuen. Woodlands in these areas predominantly border uphill shrubland/grassland areas and lowland woodlands, and sometimes adjoin rural and industrial areas. Due to limited human disturbance, these trees are mature in medium to large sizes. Dominant tree species include both native and exotic ones. Dominant native trees are <i>Ficus hispida</i>, <i>Cinnamomum camphora</i>, <i>Rhus succedanea</i>, <i>Celtis sinensis</i>, <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i>. Dominant exotic species include <i>Melaleuca quinquenervia</i>, <i>Leucaena leucocephala</i>, <i>Melia azedarach</i>, <i>Acacia confusa</i> and <i>Casuarina equisetifolia</i>.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
This LR is considered to be relatively mature and of high quality and it has little capacity to tolerate change. The sensitivity of this LR is considered to be high .					
6.4	Ho Sheung Heung Fung Shui Woodland	High	High	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>Ho Sheung Heung Fung Shui Woodland is bound by Ho Sheung Heung Road, Ho Sheung Heung Pai Fung Road and Chung Kuk Path and covers a small hill. It used to be a complete area of woodland with continuous canopy but has been fragmented by hill fires recently. Grasses and shrubs have now colonised the bald areas to connect the woodland patches. Apart from <i>Aquilaria sinensis</i>, a species of conservation interest, other typical Fung Shui Woodland trees are also found, such as <i>Garcinia oblongifolia</i>, <i>Sterculia lanceolata</i> and <i>Litsea glutinosa</i>. Other dominant trees include native species <i>Celtis sinensis</i>, <i>Ficus microcarpa</i>, <i>Ficus hispida</i>, <i>Macaranga tanarius</i>, <i>Bischofia javanica</i>, <i>Cinnamomum camphora</i>, <i>Microcos paniculata</i> and <i>Schefflera heptaphylla</i> and exotic species <i>Acacia confusa</i>, <i>Bombax ceiba</i>, <i>Dimocarpus longan</i> and <i>Melia azedarach</i> of medium to large sizes.</p> <p>This Fung Shui Woodland has high amenity and cultural value and is intolerant to change. Its sensitivity is considered to be high.</p>					
KLR 7 – Lowland Woodland					
<p>Refers to woodland growing on low lying ground (generally <40 mPD), often found near rural village areas in small, fragmented patches, with differing tree species according to location. This LR can be found in patches within areas of human activity and also includes some Fung Shui Woodland of particular cultural importance, located adjacent to certain villages as detailed in the individual descriptions. Common plant species in this LR include <i>Acacia confusa</i>, <i>Celtis sinensis</i>, <i>Cinnamomum camphora</i>, <i>Leucaena leucocephala</i> and <i>Macaranga tanarius</i>. Further details are given in the individual LR descriptions.</p> <p>Within the Study Area of KTN NDA (DP5) this LR includes woodland in Tong Kok</p>					
7.3	Lowland Woodland in Pak Shek Au and Tong Kok	High	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to the lowland woodlands at Pak Shek Au and Tong Kok, north of Fanling Highway. These woodlands are largely surrounded by adjacent industrial/open storage areas and therefore potentially suffer from disturbance by human activities. This LR also includes an old developed area west of Dills Corner that has now become completely overgrown with woodland.</p> <p>The trees in this woodland are of medium to large sizes, and are dominated by both native and exotic species. The most abundant native species include <i>Ficus microcarpa</i>, <i>Bischofia javanica</i>, <i>Cinnamomum camphora</i>, and <i>Macaranga tanarius</i>, while exotic species include <i>Acacia confusa</i>, <i>Bombax ceiba</i>, <i>Dimocarpus longan</i>, <i>Delonix regia</i>, <i>Averrhoa carambola</i>, <i>Casuarina equisetifolia</i>, <i>Chukrasia tabularis</i>, <i>Leucaena leucocephala</i> and <i>Spathodea campanulata</i>.</p> <p>This LR has a medium to high amenity value and a low capacity to tolerate change and it sensitivity is considered to be high.</p>					
KLR 8 – Shrubland / Grassland Mosaic					
<p>Refers to a mosaic of shrubland and grassland which is usually large in size and uniform in appearance. This LR is typical of the fire-maintained hill-slopes in Hong Kong and common species include grasses such as <i>Imperata koenigii</i>, <i>Neyraudia reynaudiana</i>, <i>Bidens alba</i>, <i>Panicum maximum</i> and <i>Miscanthus</i> spp., fern <i>Dicranopteris pedata</i> and shrubs <i>Baekkea frutescens</i>, <i>Breynia fruticosa</i>, <i>Litsea rotundifolia</i> var. <i>oblongifolia</i> and <i>Rhaphiolepis indica</i>.</p> <p>Within the Study Area of KTN NDA (DP5), this LR is found mainly on hillsides, particularly on the upper areas of Fung Kong Shan, Ki Lun Shan, Tai Shek Mo and its western foothill and forms a large part of the Study Area. Further details are given in the individual LR descriptions.</p>					
8.3	Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Range Foothills	Medium	Low	Medium	Medium
<p>This LR is an extensive area of shrubby grassland on the uplands of Tai Shek Mo and the foothills of the Western Ranges covering Ma Tso Lung. It largely merges into hillside woodland in at the foothills and is sometimes adjacent to some rural and urban development areas. Similar to the other hilly shrubland/grassland in Hong Kong, this LR is also maintained by periodical hill fires.</p> <p>This LR can re-establish itself fairly easily and is therefore considered to be relatively tolerant to change. Its sensitivity is medium.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLR 9 - Agricultural Land					
Refers to land used for agriculture including crops and orchards as well as ornamental plant nurseries. This LR contains a small number of structures such as small irrigation ponds, green houses, equipment sheds and small/ narrow hard paved areas. It not only contains agricultural vegetation but also some scattered non-agricultural vegetation including some shrubs and trees. It is often an intermediary between areas of development and natural areas.					
Within the Study Area of the KTN NDA (DP5), this LR is mainly found in Long Valley, Ho Sheung Heung, Shek Tsai Leng, Tong Kok and Tung Fong.					
9.1	Long Valley Agricultural Land	High	High	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR in Long Valley consists mainly of wet agriculture and includes both active and inactive fields. Common wetland crops in Long Valley include <i>Ipomoea aquatica</i> and <i>Nasturtium officinale</i>, with some fields cultivated with <i>Eleocharis dulcis</i>, <i>Oryza sativa</i> and <i>Trapa bispinosa</i>. Water lily (<i>Nymphaea</i> sp.) and Lotus (<i>Nelumbo nucifera</i>) are also cultivated in some ponds with shallow water. Dry land crops include <i>Aloe vera</i> var. <i>chinensis</i>, <i>Allium tuberosum</i>, <i>Brassica chinensis</i>, and <i>Lactuca sativa</i>. Fruit trees are present along field bunds including <i>Dimocarpus longan</i>, <i>Litchi chinensis</i> and <i>Mangifera indica</i>.</p> <p>This LR in Long Valley is of good quality and high significance in terms of crop production and being a large contiguous area of agriculture in Hong Kong. Although agricultural land per se is fairly easy to re-establish given the right environment, given the size of this LR and lack of similar areas in Hong Kong, it is relatively intolerant to change and its sensitivity is high.</p>					
9.3	Agricultural Lands in Shek Tsai Leng, Tong Kok and Fung Kong	Low	Low	Medium	Medium
<p>These agricultural lands scattered in the centre of the study area of KTN and are associated with the villages in Shek Tsai Leng, Tong Kok and Fung Kong, where they are surrounded by industrial or open storage areas. Most of the agricultural lands within this area are abandoned with weeds and invasive trees (e.g. <i>Leucaena leucocephala</i>) beginning to colonize the land and turning it to wasteland. In some locations, common vegetable plants, such as <i>Lactuca sativa</i>, are still found being cultivated in the small areas of farmland that are still active.</p> <p>This LR is mostly abandoned and does not have high value in terms of crop production but does provide some green space between the hard surfaces of industrial/open storage areas or rural development areas. Agricultural land is fairly easy to re-establish given the right environment, and is relatively tolerant to change but given the greening element amongst an area where there is a lot of industrial/ open storage LR, overall this LR is considered to have medium sensitivity.</p>					
9.4	Other Agricultural Lands in KTN	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to several small and fragmented agricultural lands in different locations within the study area of KTN, including Chau Tau Tsuen, Pak Shek Au, Yin Kong, Kam Tsin and Tai Tau Leng. Most of these agricultural lands have been wholly or partly abandoned and grass and shrubs now grow in the fields. For those fields remaining active, common crops cultivated by farmers include <i>Brassica parachinensis</i> and <i>Lactuca sativa</i>.</p> <p>This LR has low to medium value in terms of crop production and is relatively tolerant to change. It is considered to have medium sensitivity.</p>					
9.5	Other Orchards Areas in KTN	Medium	Medium	Medium	Medium
<p>This LR refers to several small and fragmented orchard areas in different locations within the study area of KTN, including around the Ma Tso Lung area, on the lower slopes of Fung Kong Shan, and near Ngam Pin. Common fruit trees in this LR include <i>Musa x paradisiaca</i>, <i>Artocarpus macrocarpon</i>, <i>Mangifera indica</i> and <i>Dimocarpus longan</i>, where the fruit trees present include <i>Artocarpus macrocarpon</i>, <i>Dimocarpus longan</i> and <i>Carica papaya</i>. Not all these orchard areas are still well looked after and some have been left untreated for a while.</p> <p>This LR has medium value in terms of crop production and being agricultural is relatively tolerant to change although trees generally take longer to grow and produce than crops so ability to accommodate change is medium. Overall this LR is considered to have medium sensitivity.</p>					
KLR 12 – Rural Development Area					
<p>Refers to traditional villages, modern villages and small scale, low rise residential areas of lower density dominated by domestic structures (mainly of 2-3 stories) interwoven with roads and paths, but limited other infrastructure. There are some Ancestral Halls, shrines and temples, and this LR may also contain limited facilities such as small police stations, post offices, and covered water reservoirs and pumping stations and some small, managed, recreational areas (such as football and basketball pitches) and small wasteland areas either wholly or partly covered by weedy or sparse vegetation. This LR often has small orchard areas associated with it (most commonly planted fruit tree species are <i>Dimocarpus longan</i>, <i>Litchi chinensis</i>, <i>Clausena lansium</i>, <i>Mangifera indica</i> and <i>Citrus maxima</i>) and private gardens, as well as amenity planting among the built structures. This LR usually occurs in fragmented patches with agricultural or natural landscape resources adjacent to it.</p> <p>Within the Study Area of the KTN NDA (DP5) this LR is mainly found in Ho Sheung Heung, Long Valley, Ngam Pin, along Fanling Highway, as well as in the central area of Kwu Tung. This LR also includes water reservoir and rifle range.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
12.1	Ho Sheung Heung Rural Development Area	Medium	Medium	Low	Medium
<p>Ho Sheung Heung village is bounded by Ho Sheung Heung Pai Fung Road and Chung Kuk Path. In the vicinity (but not part of this LR), there is Ho Sheung Heung Fung Shui Woodland and agricultural land in which water ponds are scattered. Although the village could be classified as relatively modern due to the fact many houses have been replaced by modern housing blocks of 2-3 storeys, some of the residential houses are identified as Historic Buildings (refer to Chapter 11), with Hau Kui Shek Ancestral Hall, a Declared Monument, located on the middle of the village and two Grade 3 listed buildings, Hung Hing Temple & Pail Fung Temple and ‘Sin Wai Nunnery’ located in the south of the village. The whole village is mostly hard-surfaced and has limited softscape treatment but does include some trees (e.g. <i>Dimocarpus longan</i>, <i>Litchi chinensis</i> and <i>Clausena lansium</i>) and private amenity planting (e.g. <i>Plumeria rubra</i> and <i>Thuja orientalis</i>).</p> <p>Although most of the houses in Ho Sheung Heung Village are relatively modern, the ancestral hall and graded historic buildings are vulnerable to change since they cannot be easily recreated and overall this LR has medium sensitivity.</p>					
12.2	Rural Development Area in Long Valley, Yin Kong, Tsung Pak Long and Hak Ka Wai	Medium	High	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR lies between the Shek Sheung River and Fanling Highway to the southeast of Long Valley. It covers three villages: Yin Kong Village, Hak Ka Wai and Tsung Pak Long.</p> <p>Yin Kong Village is a traditional village undergoing transformation. Some of the existing residential houses in the northern part of the village are identified as historical buildings. Earth shrines associated with Fung Shui Trees (<i>Ficus microcarpa</i> in most cases) are present including the Grade 2 listed Earth God Shrine of Kam Tsin historic building. In addition an old western styled Enchi Lodge (Grade 2 historic building) is located on the southern part of the village. Between the northern and southern parts of the village there is grassland which would have been agricultural land in the past. On the other hand, the modern aspect of Yin Kong Village is presented by many well-established modern village houses as well as facilities such as small-scaled playgrounds.</p> <p>Hak Ka Wai is a traditional village with around 100 years of history. It consists of two rows of residences, an ancestral hall (the Wong Shek Chung Ancestral Hall), a study hall, an entrance gate, enclosing walls and a watch tower. This village is a Grade 1 historic building.</p> <p>Tsung Pak Long is a traditional village undergoing transformation. It contains ancestral halls, earth shrines, a school and a church in traditional style to its northwest. Most areas within this LR are hard-surfaced and have limited vegetation except those private amenity plantings, in which fruit trees <i>Dimocarpus longan</i>, <i>Carica papaya</i> and <i>Citrus reticulata</i> and landscaping shrub <i>Duranta erecta</i> and <i>Murraya paniculata</i> are commonly found.</p> <p>The historic buildings located in this LR, particularly the relatively large area of Hak Ka Wai village, cannot be easily recreated and this LR is relatively intolerant to change. Overall it is considered to have high sensitivity.</p>					
12.9	Rural Development Area in Shek Tsai Leng, Tong Kok, Fung Kong and Tit Hang	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>Rural area in Shek Tsai Leng mainly includes Dills Corner Garden and its associated facilities. Dills Corner Garden is located along Po Lau Road and is a home for the aged. It contains several rows of 2-storey houses and is enclosed by fences. Except for several individual, large trees along the fences (mostly <i>Ficus microcarpa</i>), this area is almost entirely hard-surfaced with limited landscaping. Nevertheless, well maintained trees are planted along the roads in this area and dominant species include <i>Acacia confusa</i> and <i>Melaleuca quinquenervia</i>. There is also a soccer pitch, playground and school in this area.</p> <p>The rural area in Tong Kok, Fung Kong and Tit Hang contains loosely grouped village houses in traditional style, with some graves of Hau clan scattered in the northern part of Fung Kong Tsuen. All the villages are mostly hard-surfaced with small houses and winding paths and have limited softscape treatment but do include some abandoned fruit trees (e.g. <i>Dimocarpus longan</i>, <i>Citrus maxima</i>, <i>Musa x paradisiaca</i> and <i>Clausena lansium</i>) and private amenity planting.</p> <p>This is a LR with a medium capacity to tolerate change and its sensitivity is considered to be medium.</p>					
12.10	Lo Wu Rifle Range	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>Lo Wu Rifle Range is located between Fung Kong Shan and the Tai Shek Mo mountain. It is a large piece of grassland for military purpose. Many mature trees grow naturally in the surroundings, including <i>Bauhinia blakeana</i>, <i>Macaranga tanarius</i>, <i>Celtis sinensis</i> and <i>Leucaena leucocephala</i>.</p> <p>This LR is a man-made area but it is green land not hard surface and so has a medium tolerance to change. The sensitivity of this LR is medium.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
12.11	Rural Development Area in Ma Tso Lung	Low to Medium	Medium	Low	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to the rural area at Ma Tso Lung on the northwest of the KTN NDA Study Area. It mainly covers two villages, i.e. Ma Tso Lung San Tsuen and Shun Yee San Tsuen, which are relatively small, mainly consisting of more traditional houses of a single storey. Trees associated with this area include some fruit trees such as <i>Diospyros kaki</i>, <i>Musa x paradisiaca</i> and <i>Dimocarpus longan</i> as well as other native and exotic trees such as <i>Bauhinia blakeana</i>, <i>Leucaena leucocephala</i>, and <i>Bombax ceiba</i>.</p> <p>Although these structures cannot be recreated easily and have low ability to accommodate change, their landscape quality and maturity are not high and overall this LR has medium sensitivity.</p>					
KLR 13 - Industrial / Open Storage					
<p>Refers to areas which are heavily adapted for human industrial use, such as factory facilities, waste processing plants and other industrial buildings, often with some open areas for storage, parking or other associated activities. There is very little existing vegetation within this LR.</p> <p>Within the Study Area of KTN NDA, this LR is mainly found in areas adjacent to villages and main roads, such as Yin Kong industrial / open storage, Shek Tsai Leng, Tong Kok and Fung Kong open storage and Pak Shek Au open storage. It also includes Sheung Shui Slaughter House, Sheung Shui Water Treatment Works and Shek Wu Hui Sewage Treatment Works. This LR can also be found at the foothill of more natural LRs, often on flatter land and includes Ki Lung Shan Foothill industrial / open storage.</p>					
13.2	Industrial / Open Storage Area in Yin Kong	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>This is an isolated plot beside Yin Kong Village and is now mainly used for open storage and car park. Trees growing within this LR include <i>Macaranga tanarius</i>, <i>Ficus microcarpa</i>, <i>Celtis sinensis</i>, <i>Araucaria heterophylla</i>, <i>Carica papaya</i>, <i>Artocarpus macrocarpon</i> and <i>Syzygium jambos</i>.</p> <p>This LR predominantly consists of man-made structures which have a high capacity to tolerate change and have low landscape value. This LR is considered to have low sensitivity.</p>					
13.3	Industrial/Open Storage in Shek Tsai Leng, Tong Kok and Fung Kong	Low	Low	Medium	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR is located around the villages of Shek Tsai Leng, Fung Kong and Tong Kok and is generally in the middle of the KTN NDA Study Area. This continuous area is largely used for open storage and car parks and has a network of small road running within it, some with associated concrete drainage channels. It also has several waste processing plants within this LR. In addition, this LR has two graded historic buildings, one just west of where the Sheung Yue River flows under Fanling Highway (Yeung Yuen Grade 3 listed building) and one in Shek Tsai Leng (Yan Wah Lo Grade 3 listed building). (Further details can be found in Chapter 11).</p> <p>Trees within this LR are not actively managed and grasses occupy many places between the car parks. Tree species commonly found in the area include <i>Macaranga tanarius</i>, <i>Celtis sinensis</i>, <i>Bauhinia blakeana</i>, <i>Mallotus paniculatus</i>, <i>Ficus microcarpa</i>, <i>Acacia confusa</i>, <i>Casuarina equisetifolia</i>, <i>Leucaena leucocephala</i>, <i>Hibiscus tiliaceus</i>, <i>Dimocarpus longan</i>, <i>Livistona chinensis</i>, <i>Morus alba</i>, <i>Psidium guajava</i> and <i>Artocarpus macrocarpon</i>.</p> <p>This LR predominantly consists of man made structures which have a high capacity to tolerate change and have low landscape value. The exceptions are the two graded historic buildings which have low ability to change and are rarer, but since they form a very small part of this LR, overall it is considered to have low sensitivity.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
<div>KLR 14 – Major Transportation Corridor</div> <div>Refers to Fanling Highway running west-east along the south of the Study Area, all the associated major intersections and key adjacent roads including Castle Peak Road. There is tree planting along the sides of the roads consisting of a variety of indigenous and exotic species. In addition, there is some planting along the central divider (median) in some sections, including of amenity shrubs. Drainage channels associated with the roads/highway are considered part of this LR as they are an integral function of the roadscape.</div>					
14.1	Fanling Highway and nearby associated roads.	Medium	Medium	Medium	Medium
<div>This LR sits outside the works area and will not be affected.</div> <div>This LR is includes the Fanling Highway (Kwu Tung section), Castle Peak Road running parallel and nearby associated roads, which are the major transportation routes connecting Kwu Tung to its adjacent areas. The roads run west-east along the south of the Study Area and there are areas of established roadside planting along the sides of the roads as well as in the central divider (median) in some sections, including of amenity shrubs. In addition along parts of the roads, there are open drainage channels lined by the roadside planting. Trees commonly used for roadside planting in this area include <i>Melaleuca quinquenervia</i>, <i>Bombax ceiba</i>, <i>Ficus microcarpa</i>, <i>Casuarina equisetifolia</i>, <i>Acacia confusa</i> and <i>Bauhinia blakeana</i>.</div> <div>Despite being a man-made resource, the landscape value of this LR is increased by the significant roadside planting; a single OVT also sits within this area but considered separately (See KLR-5.4). The overall sensitivity is considered to be medium</div>					

Table 12B.3.2 - Landscape Character Areas and their Sensitivity- KTN NDA (DP5)

Id No.	Landscape Character Area (LCA)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLCA-1	Natural Hillside Landscape	High	High	Low	High
<p>This LCA sits outside the works area and will not be affected.</p> <p>Refers to large hillside areas which are dominated by shrubland, grassland and some woodland in places.</p> <p>Within the Study Area for KTN NDA this LCA encompasses Tai Shek Mo (183 mPD), Western Range of Tai Shek Mo (Ma Tso Lung and Lok Ma Chau) (144 mPD), Ki Lun Shan (222 mPD), and Fung Kong Shan (40 mPD).</p> <p>Tai Shek Mo lies to the north of the Study Area. The primary ridgeline extends southward while the Western Range ridgeline runs approximately NE-SW, covering Ma Tso Lung and Lok Ma Chau. These two sections of LCA are separated by lower land and to their south the smaller Fung Kong Shan is found.</p> <p>Ki Lun Shan lies to the south west of the Study Area.</p> <p>This landscape area is natural and has high landscape quality. Its significance is also high and it is not capable tolerate to change. Therefore its sensitivity is considered to be high.</p>					
KLCA-2	Rural and Urban Peripheral Village Landscape	Medium	Low	Medium	Medium
<p>Refers to rural village areas and village areas on the fringes of urban developments, including relic landscapes of former villages. This LCA is dominated by small or medium sized villages with modern and traditional houses and some Ancestral Halls, interspersed with small agricultural plots and comprises a broad mix of other land uses including water ponds, schools, sports grounds, and playgrounds, some open storage areas and car parks, and a golf course to the southeast of Kwu Tung. This LCA also has some small patches of woodland as well as vegetation associated with the villages and park areas.</p> <p>Within the Study Area for KTN NDA this LCA is found to the west near the San Tin Interchange, in the east at the Shek Sheung River and the area east of this river, and more centrally bordering Ma Tso Lung Road, Shek Tsai Leng and east of Fung Kong Shan.</p> <p>This LCA is considered to have medium tolerance to change and moderate amenity value. Its sensitivity is therefore medium.</p>					
KLCA-4	Industrial Landscape	Low	Low	High	Low
<p>This LCA sits outside the works area and will not be affected.</p> <p>Refers to areas comprising a broad mix of land uses including factories, utility facilities, workshops, open storage and some channelized water courses. It is normally located on low lying ground or at the base of hills and may include small and fragmented areas of residential houses and their associated agricultural land. There is little significant vegetation among this built environment, but small patches of vegetation do exist, particularly along the channelized river.</p> <p>Within the Study Area for KTN DPs this LCA is found to the west near the San Tin Interchange, in the east at the Shek Sheung River and the area east of this river, and more centrally bordering Ma Tso Lung Road, Shek Tsai Leng and east of Fung Kong Shan.</p> <p>This LCA usually contains abandoned facilities that are able to accommodate change. Except for the significant planting along the Ng Tung River, most areas in this LCA have little vegetation, resulting in a low landscape amenity. Therefore, its sensitivity is considered to be low.</p>					
KLCA-5	Lowland Agricultural Landscape	Medium	Medium	Low	High
<p>Refers to large areas dominated by cultivated land with scattered small villages and low-rise buildings and may also include some fishponds and irrigation ponds. This LCA is mostly found among lowlands and floodplain areas.</p> <p>Within the Study Area the key area of this LCA is found at Long Valley which is a highly sensitive LR in itself. And there are also some isolated farmlands at Chau Tau and Ma Tso Lung. Tree vegetation is generally sparse and restricted to field boundaries, adjacent to local houses and, together with bamboo, along the banks of Sheung Yue River.</p> <p>The value and significance of the LCA is high, largely due to it encompassing the high quality, contiguous agricultural land of the core Long Valley area. It has little tolerance to change and its sensitivity is considered to be high.</p>					

Id No.	Landscape Character Area (LCA)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
KLCA-6	Major Transportation Corridor Landscape	Medium	Medium	Medium	Medium
<p>This LCA sits outside the works area and will not be affected.</p> <p>Refers to major highway and railway areas, with their scattered associated buildings.</p> <p>Within the Study Area for KTN DPs, Fanling Highway is a major transport route stretching in an east west direction located at the south boundary of the Study Area. It has two key connection junctions at Fan Kam Road to the east and San Sham Road to the west. In addition, the MTRC East Rail leading to the Lo Wu Station runs south-north in the east of the study area. Lok Ma Chau Spur Line branches off from Sheung Shui Railway Station to Lok Ma Chau Station, of which this section is underground passing through KTN NDA.</p> <p>The resource is considered to be highly tolerance to change and its sensitivity is medium.</p>					
KLCA-7	Major Water Course Corridor Landscape	Medium	High	Medium	Medium
<p>This LCA sits outside the works area and will not be affected.</p> <p>Refers to modified water courses channelised with concrete or grasscrete and also includes the vegetation associated with the water course, both within the channel and along the banks as well as in the ridge of the banks.</p> <p>Within the Study Area of KTN NDA this LR includes the Ng Tung River, Sheung Yue River and Shek Sheung River.</p> <p>The landscape amenity and significance of this LCA are medium to high. Due to its partially artificial state, it is relatively tolerant to change and its sensitivity is considered to be medium.</p>					

12B.3.1 Summary of baseline conditions

The LRs within the study area which have been recognised for their higher sensitivity are predominantly natural streams, woodland, marsh/wetland, selected water ponds. Other resources such as agricultural land and rural development areas may also have high sensitivity due to certain elements or characteristics such as quality of the environment, maturity of landscape planting or historically significant buildings/structures. The baseline conditions for LRs or DP Package B are summarised below.

LRs associated with water are generally considered to have a higher landscape value. In this case those at Ma Tso Lung (KLR-2.4) are rated high sensitivity. This rating takes into account the entirety of the water course and the nature of the stream in relation to whether the channel is mainly natural, its seasonality of flow or whether it has sections which have been altered by human activity. The streams in Kwu Tung (KLR-2.1) were generally natural but degraded by pollution, with seasonal flows and some sections fortified by concrete banks such that they were considered less sensitive and rated 'medium'.

Similarly to watercourses, ponds and marsh/wetland are generally considered a valuable landscape resource as many incorporate natural planting, strengthen rural character and have strong cultural connections in terms of agricultural production and land use pattern. Ponds located at Ho Sheung Heung (KLR-3.1), in Long Valley associated with agriculture (KLR-3.2) and within the closed area (KLR-3.8) are all considered as having 'high' sensitivity. In addition all the marsh/wetland areas including those in Long Valley (KLR-4.1) and the mitigation wetland along the Sheung Yue River (KLR-4.2) and Wetland/ Marsh in the Closed Area (KLR-4.3) are all rated with high sensitivity.

Trees are considered as precious LRs which have a vital role in landscape character, diversity, naturalness and maturity of a landscape. As a result all areas of woodland within the NDA (both hillside and lowland) are rated as having 'high' sensitivity including Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong (KLR-6.3), Ho Sheung Heung Fung Shui Woodland (KLR-6.4) and Lowland Woodland in Pak Shek Au and Tong Kok (KLR7.3). In addition, the five OVTs located within the roadside planting near Fanling Highway and Castle Peak road are highly sensitive due to their maturity; one of these OVTs (reference number LCSD N/45) sits within the study area of DP5. Scattered, isolated and small patches of man-made plantation are considered to be less valuable and therefore less sensitive.

KLR8-Shrubland/Grassland Mosaic surrounds the study area, associated with the local hillsides and prominences such as Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Range Foothills (KLR-8.3). These LR are generally located on undeveloped areas of natural topography however they are managed using periodic fires, therefore their overall sensitivity is considered to be medium.

While most agricultural LRs have medium sensitivity due to their varying quality and use (vacant or in-use), the agricultural land in Long Valley (KLR9.1) is a large contiguous area which would be difficult to recreate in Hong Kong due to a lack of similar areas, this agricultural land is therefore recognised as having high sensitivity.

Most rural development areas (KLR12) are identified in having a medium sensitivity as a result of varying quality of built form, vegetation cover and hard landscape treatments. The rural development area in Long Valley, Ying Kong, Tsung Pak Long and Hak Ka Wai has a number of historical buildings within it, with the whole of Hak Ka Wai village is designated as Grade 1 historic building. This KLR-12.2 is therefore considered to be more sensitive than other rural development areas and has 'high' sensitivity.

It should also be noted that there is a considerable amount of open storage/ industrial land within the Study Area which is highly degraded in terms of landscape quality and changeable in terms of characteristics; all of these areas are considered of low quality and sensitivity.

With regards to LCAs, Natural Hillside Landscape (KLCA-1) is considered highly sensitive, largely due to its high landscape quality and inability to accommodate change. The Lowland Agricultural Landscape encompassing the Long Valley area (KLCA-5) similarly has high sensitivity given it includes a large contiguous area of high quality agricultural land in the Long Valley area (see KLR-9.1) and has a low ability to accommodate change. Rural and Urban Peripheral Village Landscape (KLCA-2) and Major Water Course Corridor Landscape (KLCA-7) have medium sensitivity, largely due to their moderate amenity value and the Major Transport Corridor Landscape (KLCA-6) also has medium sensitivity mainly due to the extensive planting along the Fanling Highway and Castle Peak Road conferring high greening and lowering this LCA's ability to accommodate change. Industrial Landscape (KLCA-4) has low sensitivity due to their low landscape quality and high ability to accommodate change.

12B.4 Details of Site Formation Impacts – KTN Schedule 2 DP5

DP 5 relates to the construction of 2no. Sewage Pumping Stations in the KTN NDA, these are located:

- To the south of Ma Tso Lung Shun Yee San Tsuen Village, north of the KTN NDA.
- South of Ho Sheung Heung Village.

In both cases, the construction of the SPS will require the direct loss of Agricultural land and associated shrubland vegetation cover. The SPS building will be approximately 5m high surrounded by solid walling at approximately 3m high. The footprint of both buildings is 15x10m.

12B.5 Potential Landscape and Visual Impacts

During the construction of the various components of DP 5, potential landscape and visual impacts will generally result from the following:

- Site clearance including clearance of vegetation.
- Site formation works including excavations for foundation and construction of utility pits / connections
- Stockpiling of construction materials, including existing topsoil, and storage of construction equipment and mechanical plant.
- Construction of Sewage Pumping Station Buildings, internal access road and pedestrian access, boundary walling/fencing
- Temporary structures within the Project Site including boundary fencing/hoarding and parking areas.
- Alteration to natural terrain.

During the operation phase, potential impacts will result from the following:

- Operation of new Sewage Pumping Stations.
- Residual impacts from loss of trees and vegetation during the construction phase.

12B.6 Landscape Impact Assessment

The landscape impact assessment has been carried out taking into consideration the baseline LR and LCAs described in **Section 12B.3** and potential impacts described in **Section 12B.4 and 5**.

Further details of the potential landscape impacts are provided for each DP below.

The magnitude of change on KTN DP 5 LR and LCAs are presented in **Tables 12B.6.1 and 12B.6.2** below.

Landscape Impacts are mapped on **Figure 12.52.21 and 12.52.32**.

Table 12B.6.1 Magnitude of Change on LRs (DP 5)

Note - For LRs where no impact is recorded, these are omitted.

LR Code	Name	DPs and Site No. (Land Use Type) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR 1	Channelized Water Course											
1.3	Sheung Yue River	DP5: New Sewage Pumping Stations	Study Area: 9.6ha / 1.12km SP Boundary 0.003ha / 50m	Small	Fair	Fair	Temporary Short Term	Permanent	Reversible	Reversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> DP 5 – SPS South of Ho Sheung Heung The new DP will be built close the river frontage. A small section of the upper engineered river bank, forming part of the existing access track would be affected by the proposed construction works. Minor vegetation clearance works would be required as well as breaking out of hard surfacing. Given the previous engineering works within this area as part of the river channelisation, the compatibility of the works is considered to be fair in construction and operation. As a result of the very small scale of the impacted area and the man-made nature of the piece of landscape affected, the overall magnitude of change for this LR is considered to be small during both construction and operation.										
KLR 8	Shrubland/ Grassland Mosaic											
8.3	Shrubland/ Grassland Mosaic in Tai Shek Mo and the Western Ranges Foothills	DP5: New Sewage Pumping Stations	Study Area: 38ha DP Boundary 0.27ha	Small	Poor	Poor	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> DP 5 – SPS South of Ma Tso Lung Shrubland vegetation would be cleared and the works area filled to raise the formation level up to the correct height. Boundary walling will be erected together with internal area of hard standing for vehicular access within the compound. The SPS building will be housed within this compound area. The construction would replace the semi-natural vegetation cover with a building and associated compound area involving a permanent loss of the LR; in this case the compatibility during construction and operation is considered to be poor. As a result of the overall small scale of the works and the large scale abundance of the LR in the wider landscape, the magnitude of change is considered to be small in construction and negligible in operation.										

LR Code	Name	DPs and Site No. (Land Use Type) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR 9	Agricultural Land											
9.3	Agricultural Lands in Shek Tsai Leng, Tong Kok and Fung Kong	DP5: New Sewage Pumping Station	Study Area: 9.4ha DP Boundary: 0.22ha	Small	Poor	Poor	Temporary Medium Term	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> DP 5 – SPS South of Ho Sheung Heung A small area of agricultural land would be cleared and the works area filled to raise the formation level up to the correct height. Boundary walling will be erected together with internal an area of hard standing for vehicular access within the compound. The SPS building will be housed within this compound area. The construction would replace the semi-natural vegetation cover with a building and compound area; in this case the compatibility during construction and operation is considered to be poor. As a result of the overall scale of the works located on the fringe of this LR, the magnitude of change is considered to be small in construction and negligible in operation.										
9.5	Other Orchards in KTN	DP5: New Sewage Pumping Station	Study Boundary 2.9ha DP Boundary 0.003ha	Small	Fair	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> DP 5 – SPS South of Ma Tso Lung An extremely small area of orchard would be affected; at most some minor clipping of trees may be required in terms of overhang tree limbs into the site area. In addition some minor earthworks may be required in order to construct a level foundation for the proposed pumping station. Given the small scale nature of the works, the compatibility during construction is considered to be fair. In operation the works will affect only a small area on the periphery of this resource therefore the compatibility is considered to be good. The construction are is very small and will have limited impact on the LR therefore the magnitude of change during construction and operation is considered to be negligible.										
KLR 12	Rural Development Area											
12.1	Ho Sheung Heung Rural Development Area	DP5: New Sewage Pumping Station	Study Boundary 11.23ha DP Boundary 0.008ha	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> DP 5 – SPS South of Ho Sheung Heung A very small area of this LR will be affected by site formation. Given the previously development nature of this LR and small area concerned the compatibility of the works during construction and operation are considered to be good. Again, due to the very small area concerned and good compatibility, the magnitude of change is considered to be negligible during construction and operation.										

Table 12B.6.2 Magnitude of Change on LCAs (DP5)

Note - For LCAs where no impact is recorded, these are omitted.

LCA Code	Name	Site No. (Land Use Type*) Impacting LCA	Area of LCA affected within DP boundary (ha) (Approx. percentage of this impacted)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLCA-2	Rural and Urban Peripheral Village Landscape	This LCA is affected by site: DP 5: New Sewage Pumping Station	Study Area: 84.4ha DP Boundary 0.17	Small	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> DP 5 – SPS South of Ma Tso Lung Construction of the SPS would require vegetation clearance and cut and fill work to raise the formation level up to the correct height. Boundary walling will be erected together with internal an area of hard standing for vehicular access within the compound. The SPS building will be housed within this compound area. The construction would replace the semi-natural vegetation cover with a building and associated compound footprint; in this case the compatibility during construction and operation is considered to be fair given the developed nature of the LCA. As a result of the overall scale of the works and the limited impact this would have on the wider LCA, the magnitude of change is considered to be negligible in both construction and operation.										
KLCA-5	Lowland Agricultural Landscape	This LCA is affected by site: DP 5: New Sewage Pumping Station	Study Boundary: 48.7ha DP Boundary 0.36ha	Small	Poor	Poor	Temporary Short Term	Permanent	Reversible	Irreversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> DP 5 – SPS South of Ho Sheung Heung & DP 5 – SPS South of Ma Tso Lung Construction of the SPSs would require vegetation clearance and cut and fill work to raise the formation level up to the correct height. Boundary walling will be erected together with internal an area of hard standing for vehicular access within the compound. The SPS building will be housed within this compound area. The construction would intrude into this relatively undeveloped open landscape area and replace a piece of farmland, it is therefore considered to have poor compatibility during construction and operation. As a result of the overall scale of the works and the limited impact this would have on the wider LCA, the magnitude of change is considered to be negligible in both construction and operation.										

12B.7 Summary of key landscape impacts

A summary of the key landscape impacts identified in **Table 12B.6.1 and 2** for both SPS is provided below.

DP 5 - New sewage pumping stations (SPS) in KTN NDA

The principal impacts as a result of the SPS construction works will occur during the construction stage. The following LR/LCAs are affected:

SPS South of Ho Heung Sheung

KLR-1.3 Sheung Yue River

KLR-9.3 Agricultural Lands in Shek Tsai Leng, Tong Kok and Tung Fong

KLR-12.1 Ho Sheung Heung Rural Development Area

KLCA-5 Lowland Agricultural Landscape

It is predicted that a small impact will be generated in relation to KLR 9.3 which forms the majority of the works area. Vegetation clearance and earthworks will be required, resulting in a small loss of the associated LR area. The impacts within KLR 1.3 and 12.1 are negligible. As a result of the very small nature of the works, there will be negligible impacts in relation to LCA-5.

SPS South of Ma Tso Lung

KLR- 8.3 Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Range Foothills

KLR-9.5 Other Orchards in KTN

KLCA-2 Rural and Urban Peripheral Village Landscape

KLCA-5 Lowland Agricultural Landscape

It is predicted that a small impact will be generated in relation to KLR 8.3 which forms the majority of the works area. Vegetation clearance and earthworks will be required, resulting in permanent loss of the associated LR/LCA area. The impacts within KLR 9.5 are negligible. In addition, the impacts on KLCA-2 and 5 are also negligible due to the very limited extent of the works.

12B.8 Significance of Landscape Impacts before mitigation

The potential significance of landscape impacts during the construction and operational phases, before mitigation, is provided in **Tables 12B.8.1 and 12B.8.2** for DP 5. The assessment follows the methodology proposed in **Section 12.18** and the matrix provided in **Table 12.18.1**.

Landscape Impacts are mapped on **Figure 12.52.21 and 12.52.32**

Table 12B.8.1 Significance of landscape impacts on LRs (DP5)

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of Impact (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
KLR 1	Channelized Water Course					
1.3	Sheung Yue River	Medium	Small	Small	Slight	Slight
KLR 8	Shrubland/Grassland Mosaic					
8.3	Shrubland/Grass land Mosaic in Tai Shek Mo and the Western Range Foothills	Medium	Small	Negligible	Slight	Insignificant
KLR 9	Agricultural Land					
9.3	Agricultural Lands in Shek Tsai Leng, Tong Kok and Fung Kong	Medium	Small	Negligible	Slight	Insignificant
9.5	Other Orchards in KTN	Medium	Negligible	Negligible	Insignificant	Insignificant
KLR 12	Rural Development Area					
12.1	Ho Sheung Heung Rural Development Area	Medium	Negligible	Negligible	Insignificant	Insignificant

In summary for the LRs, slight adverse impacts are predicted at the construction stage for KLR1.4 Sheung Yue River, KLR 8.3 Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Range Foothills and KLR 9.3 Agricultural Lands in Shek Tsai Leng and Fung Kong due to vegetation clearance, earthworks works and subsequent construction of both SPSs. Due to the very small footprint of the works, impacts during the operational stage are considered to be slight to KLR 1.4 and insignificant to KLR 8.3 and 9.3.

The remaining LRs will all experience insignificant impacts at the construction and operational stage due to minimal interference as a result of the construction works.

Table 12B.6.2 Significance of Impacts on LCAs (DP5)

LCA Code	Name	LCA Sensitivity (High/ Medium/ Low)	Magnitude of Impact (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
KLCA 2	Rural and Urban Peripheral Village Landscape	Medium	Negligible	Negligible	Insignificant	Insignificant
KLCA 5	Lowland Agricultural Landscape	High	Negligible	Negligible	Insignificant	Insignificant

In summary for the LCAs, insignificant impacts are predicted during the construction and operational stage in relation to KLCA 5 Lowland Agricultural Landscape and KLCA-2 Rural and Urban Peripheral Village Landscape. In both cases the construction footprint is very small and will have a limited influence on the surrounding LCAs.

12B.9 Landscape and Visual Mitigation Measures for Construction and Operation

The proposed mitigation measures for the Project are described in the following section and summarised in **Table 12B.9.1** below. The same table also lists the agents responsible for the capital funding, the implementation and the maintenance of the suggested measures. These agents will be agreed before the start of construction. Mitigation measures which are not relevant to this DP have been omitted.

Table 12B.9.1 - Summary of Proposed Mitigation Measures

Mitigation Measure Code	Summary Description	Capital Funding Agency	Implementation Agency	Post-Construction Maintenance Agency ⁽¹⁾
MM1	Minimum Topographical Change	Government	Contractors of the Government	n/a
MM2	Detailed Design - Visual	Government	Contractors of the Government	DSD
MM4	Tree Protection & Preservation	Government	Contractors of the Government	n/a
MM5	Tree Transplantation	Government	Contractors of the Government	DSD
MM6	Slope Landscaping	Government	Contractors	DSD
MM7	Compensatory Planting	Government	Contractors of the Government	DSD
MM9	Vertical Greening	Government	Contractors of the Government	DSD
MM10	Green Roof	Government	Contractors of the Government	DSD
MM11	Screen Planting	Government	Contractors of the Government	DSD
MM14.3	Watercourse Impact Mitigation – Enhancement Planting along Embankment	Government/Private Section	Contractors of the Government/Private Sector	DSD/LCSD/AFCD
MM16	Screen Hoarding	Government	Contractors of the Government	n/a
MM17	Light Control	Government	Contractors of the Government	n/a

⁽¹⁾ The Contractor will be responsible for landscaping during the agreed establishment and maintenance period. Other designated maintenance agents to take up maintenance of landscaping after end of agreed period.

Minimising Topographical Change (MM1)

To minimise landscape and visual impacts, the footprint and elevation of the proposed SPS have been optimised to reduce potential topographical/ landform changes, as well as reduce land take and interference with natural terrain and reduce overall earth movements.

Detailed Design (Visual) (MM2)

The footprint of development components and the works area should also be kept to a practical minimum and the detailed design of development components for construction stage should follow the Sustainable Building Design Guidelines. The form, textures, finishes and colours of the proposed SPS buildings and boundary treatment should aim to be compatible with the existing surroundings. To improve visual amenity, designs should be aesthetically pleasing and treatment of structures also improve visual amenity. For example natural building materials such as stone and timber should be considered for architectural features, and light earthy tone colours such as shades of green, shades of grey, shades of brown and off-white should also be considered to reduce the visibility of the development components.

The treatment of the SPS facades and boundary should also reflect the materials and architectural styles of the surrounding proposed development in order to maximise visual integration.

Green roofs have also been recommended (See MM10).

Tree Protection & Preservation (MM4)

Existing trees to be retained within the Project Site should be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas.

A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.

Tree Transplantation (MM5)

Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project

programme. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 and HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit. Transplanted trees should be located as close as possible to the works area.

Slope Landscaping (MM6)

Site formation has been reduced as far as possible to avoid substantial slope cutting (also see MM1).

Hydroseeding of modified slopes should be done as soon as grading works are completed to prevent erosion and subsequent loss of landscape resources and character. Woodland tree seedlings and/ or shrubs should be planted where the slope gradient and site conditions allow. In addition, landscape planting should be provided for the retaining structures associated with modified slopes, where conditions allow. All slope landscaping works should comply with GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes.

Compensatory Planting (MM7)

Compensatory tree planting for all felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006. Compensatory planting is proposed directly around the SPSs to tie in with MM11 proposals.

Vertical Greening (MM9)

Planting of climbers to grow up vertical surfaces were appropriate, such as along perimeter fencing/walling and building walls are recommended to break up uniform surfaces and provide visual amenity.

Green Roof (MM10)

Roof greening where appropriate should be established on proposed buildings to reduce exposure to untreated concrete surfaces and particularly mitigate visual impact to VSRs at higher elevations.

Screen Planting (MM11)

Tall screen/buffer trees and shrubs should be planted to screen proposed structures such as roads and buildings. This measure may additionally form part of the compensatory planting and will improve compatibility with the surrounding landscape.

Watercourse Impact Mitigation (MM14)

For channelized watercourses if these are modified, they should match the existing and include enhancement planting to upgrade the channels as appropriate, including consideration of wetland planting along embankments where appropriate.

Enhancement Planting along Embankment MM14.3

For channelised watercourses, if these are modified, the Drainage Services Department Practice Note No.1/2005 – Guidelines on Environmental Considerations for River Channel Design, should be considered and appropriate mitigation measures included ensuring the new watercourses match the existing as far as possible. Measures can include enhancement planting to upgrade the channels as appropriate, including consideration of wetland planting along embankments where appropriate; as well as consideration of the best materials for the channel lining (e.g. gabion). All measures must also ensure any necessary maintenance work can be carried out and that the channel meets all its requirements for water flow.

The proposed construction of the SPS south of Ho Sheung Heung will interface with the upper access track of the Sheung Yeung River. As stated above, the replacement channel works should match the existing and where possible include enhancement planting.

Screen Hoarding (MM16)

Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders publically accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used.

Light Control (MM17)

Construction day and night time lighting should be controlled to minimise glare impact to adjacent VSRs during the construction stage. Shrouded or directional lighting should be considered where appropriate as a general good practice construction measure but especially where works are in close proximity to residential VSRs.

Other good practise measures.

For areas unavoidably disturbed by the Project on a short term basis which will not undergo change as part of the DP (schedule 2 & 3 works), the general principle is to reinstate the area back to its original condition. Equally reinforced turf systems should be considered for appropriate areas such as car-parks or promenades.

With regard to topsoil, where identified, it should be stripped, treated appropriately, and where suitable and practical stored for re-use in the construction of the soft landscape works such as roadside amenity strips, and open space sites. It is assumed that the topmost 100mm of soil surface will be topsoil material. This good site practice and will also minimize off-site disposal.

For the all planting, this should be installed as soon as the areas become available, to achieve early establishment.

12B.10 Significance of Residual Landscape Impacts upon mitigation

The proposed landscape and visual mitigation measures, as described in **Section 12B.10**, have been applied to the various impacts and used to identify potential residual impacts.

The potential significance of landscape impacts during the construction and operational phases, before and after mitigation at day 1 and year 10, are provided in **Tables 12A.10.1** and **12A.10.2**. The tables assume that the appropriate mitigation measures have been applied and that the full effect of the soft landscape mitigation measures would be fully realised and established after 10 years.

Where insignificant impacts have been identified, mitigation measures are still shown in the table as these would be applied as best practice in the construction and operational stages as part of a consistent design and construction approach.

Landscape mitigation measures are presented on **Figures 12.52.61 & 62**.

Table 12B.10.1 Residual Landscape Impact on Implementation of Mitigation Measures for LRs

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
KLR 1	Channelized Water Course							
1.3	Sheung Yue River	Slight	Slight	1, 14.3	4	Insignificant	Insignificant	Insignificant
KLR 8	Shrubland/ Grassland Mosaic							
8.3	Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Range Foothills	Slight	Insignificant	1, 4, 5, 6, 7	4	Insignificant	Insignificant	Insignificant
KLR 9	Agricultural Land							
9.3	Agricultural Lands in Shek Tsai Leng, Tong Kok and Fung Kong	Slight	Insignificant	1, 4, 5, 7	4	Insignificant	Insignificant	Insignificant
9.4	Other Orchards in KTN	Insignificant	Insignificant	1, 4	n/a	Insignificant	Insignificant	Insignificant
KLR 12	Rural Development Area							
12.1	Ho Sheung Heung Rural Development Area	Insignificant	Insignificant	1, 4, 5, 7	4	Insignificant	Insignificant	Insignificant

Table 12B.10.2 Residual Landscape Impact on Implementation of Mitigation Measures for LCAs

LCA Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
KLCA-2	Rural and Urban Peripheral Village Landscape	Insignificant	Insignificant	1, 4, 5, 7	4	Insignificant	Insignificant	Insignificant
KLCA-5	Lowland Agricultural Landscape	Insignificant	Insignificant	1, 4, 5, 7	4	Insignificant	Insignificant	Insignificant

In summary, KLR 1.3 Sheung Yue River is predicted to experience slight adverse impacts prior to mitigation. It is considered that mitigation measures proposed which consist of minimising topographical change and enhancement planting along the embankment of Sheung Yue River, the significance of impact will reduce to insignificant in the construction and operation stage.

KLR 8.3 Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Range Foothills is predicted to experience slight adverse impacts during construction, prior to mitigation. It is considered that mitigation measures which consist of preserving and protecting trees where possible, transplanting trees which cannot be retained insitu and compensating planting directly around the SPS will reduce this impact to insignificant in the construction and operational stage.

KLR 9.3 Agricultural Lands in Shek Tsai Leng, Tong Kok and Fung Kong are also predicted to experience slight adverse impacts during construction, prior to mitigation. It is considered that mitigation measures proposed which consist of minimising topographical change, preserving and protecting trees where possible, transplanting trees which cannot be retained insitu and compensating plating directly around the SPS will reduce this impact to insignificant in the construction and operational stage.

All other LR would experience insignificant impacts during construction and operation.

In terms of LCAs, KLCA 2 Rural and Urban Peripheral Village Landscape and KLCA-5 Lowland Agricultural Landscape are both predicted to experience insignificant impacts during construction and operation due to the limited influence such small works areas would have on the wider LCAs.

Mitigation measures in terms of limiting impacts on existing vegetation and topography have been recommended as best practice measures to ensure a high quality development for both LR and LCAs where insignificant impact have been identified.

12B.10.1 Conclusion

Due to the very small construction footprint and relative low sensitivity of the LR and LCAs affected by this DP, it is considered that all potentially adverse landscape impacts can be controlled through the implementation of construction and operational mitigation measures. The most effective measures in both locations arise from minimisation of the construction footprint in order to avoid impacting LR unnecessarily combined with the provision of tree protection and compensatory planting, which can reduce all impacts to insignificant during the construction and operation stage.

In this case it is considered that the SPS within DP Package B would be acceptable in terms of landscape impacts.

12B.11 Visual Impact Assessment

Visual impacts have been assessed for the construction and operational phases of the Schedule 2 DPs areas; the methodology is set out in **Section 12.19**.

12B.11.1 Visual Baseline Conditions

The area covered by KTN NDA, of which the schedule 2 DP form part, is around 450 ha and is bound by the Closed Area Boundary to the north; Shek Sheung River to the east; Fanling Highway and Castle Peak Road to the south; and Pak Shek Au and Tit Hang villages to the west. The landscape character of the area can be broadly described as a low value, rural lowland area predominantly used for open storage and industrial uses, surrounded by higher value, natural landscape features, villages and interspersed agricultural land.

This locality is fairly enclosed by prominent green hill ranges in close proximity on three sides: the ridges of Tai Shek Mo to the north; Lok Ma Chau range to the west (Western ranges); and Ki Lun Shan and Ki Lun Shan Au to the south. The lower lying Ma Tso Lung valley runs between Lok Ma Chau range and Tai Shek Mo while between Lok Ma Chau range and Ki Lun Shan there is lower land containing Pak Shek Au village and the Fanling Highway. To the east of the land is generally flatter and more open until past the urban area of Sheung Shui, where the hill range including Cham Shan and Wa Shan is visible. Fung Kong Shan is also a prominent hill in the middle providing strong green backdrop. Hill slopes are undisturbed and mainly vegetated by grass and scrub vegetation with trees found principally in the foothills and major valleys. Villages such as Kam Tsin and Ho Sheung Heung have been established at the base of the foothills with clusters of trees or woodland on the lower slopes.

The central southern and south eastern parts of this landscape are generally flat with the central southern part being more developed and the south eastern part made up of the predominantly agricultural Long Valley. The Long Valley is a significant rural feature of this area with high landscape value, made up of a mix of active and inactive agricultural land, some ponds, small areas of marsh and mitigation wetlands with limited built structures. The central southern part of the study area is more developed, made up of mixed land uses such as small residential developments, scattered villages, agricultural lands, rural areas and rural industries including vehicle repair, construction material storage and container storage. Villages, such as Yin Kong Village and Ho Sheung Heung are generally made up of traditional houses with no high rise structures, complementing the rural surroundings. Rivers and streams are also important features of the local landscape. The channelised Sheung Yue River and Shek Sheung River are both dominant visual components of the landscape, made more conspicuous by their engineered embankments.

DP5 – New Sewage Pumping Stations (SPS) in KTN NDA.

Two SPS are proposed in KTN NDA to convey the sewage flows from KTN NDA to Shek Wu Hui Sewage Treatment Works for treatment and its disposal, details on their operational requirements are presented in **Section 2.4.2.5**. The SPS south of Ma Tso Lung sits within a predominantly undeveloped valley landscape formed by the hillsides of the Western Ranges and Fung Kong Shan. The surrounding landscape is used for agricultural purposes with small pockets of woodland and village developments. Long distance views are available to the south over the NDA area towards Lam Tsuen Country Park. Locally the landscape is level which, in combination with surrounding tree/ vegetation cover, restricts views at ground level to medium and short distances.

A second SPS south of Ho Sheung Heung is positioned close to Sheung Yue River within an agricultural landscape setting. Locally the landscape is well wooded and appears relatively natural, this is contrasted against the highly engineered appearance of the Sheung Yue River Channel which has been realigned and channelised. At ground level views are limited by the surrounding tree cover.

12B.11.2 Visual envelope

The visual envelope (VE) for these DPs is generally shared with that of the KTN NDA project. Generally the viewshed is confined to the north and east by the ridgeline formed by the summits of Cheung Po Tau, Cham Shan, Wa Shan and reaching across to the more distant and easterly Tsung Shan and Mau Tau Leng summits. To the south east the foothills of Lung Shan contain the view while to the southern and western side the VE is contained by the high-rise development of Fanling / Sheung Shui with the mountain range of Tai Shek Mo in the background. The predominantly level landscape means that views from elevated positions can generally see very long distances whereas many ground level views are limited by intervening vegetation cover and built form.

Table 12B.11.1 below details the VPs in relation to DP 5 and describes their overall sensitivity. This information is also presented on the following figures: **Figures 12.53.1** Vantage Point (VP) locations for DP 5.

Figures 12.53.11, 12 and 15 present existing views taken from vantage points within the study area looking towards the relevant NDA and the DPs. Representative photographs have been selected that present a typical view from the VSR relating to the DP. Since access could not be gained for all VSRs, especially for private residential developments, the representative viewing locations may have been adjusted if necessary, as described in the methodology. Bearing in mind most VSRs will have various views, and considering access was not always available, the selected photographs are considered the best alternative that represents the typical view of the VSRs.

Figures 12.55.4a, 4b, 7a and 7b provide representative photomontages showing the predicted view from selected viewpoints depicting existing conditions, Day 1 of Operation Phase without Mitigation Measures, Day 1 of Operation Phase with Mitigation Measures and Year 10 of Operation Phase with Mitigation Measures.

Table 12B.11.1 – VSRs and their sensitivity (DP 5)

VP CODE	Name	Category of VSR (Strategic/District/Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed DP											
KVP8	Ying Kong Village	Local	Residential – Low Rise	275	Many	Fair	Yes	Partial	Long	Frequent	High
	Views from edge of agricultural plots fronting Ying Kong Village provide low level views across open and well managed farmland; this is crossed by numerous telegraph poles and intermittent agricultural buildings which detract from the quality of the views. The dense and uniform screening provided by mature tree planting in the middle ground restricts long distance view however the peaks and ridgeline of mountains in the distance appear above the tree cover, such as the varied and steep terrain of Tai Shek Mo. The DP (SPS South of Ho Sheung Heung) would appear in the middle ground of the view sitting within an existing tree belt.										
KVP9 (K6b)	Ho Sheung Heung	Local	Residential - Low Rise	100	Many	Good	No	Glimpse	Long	Frequent	High
	Residential view from the southern portion of Ho Sheung Heung looking south west over large area of surface parking on un-made ground and broken areas of vegetation. These activities have degraded the quality of the view in the foreground however; better quality long distance views are possible to the hillside of Ki Lun Shan beyond the Long Valley. The nature of the view is very open and apart from the car parking in the foreground, the landscape appears relatively undeveloped in terms of built form. The DP (SPS South of Ho Sheung Heung) would appear in the middle ground beyond the existing un-surfaced car parking areas within an existing tree belt.										

VP CODE	Name	Category of VSR (Strategic/District/Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed DP											
KVP12	Ma Tso Lung Shun Yee San Tsuen Village	Local	Residential – Low Rise	300	Few	Good	Yes	Partial	Long	Frequent	High
This view is taken from midway long the access road running past the village at an opening overlooking the adjacent agricultural land. The landscape to the south of the village is generally level which allows long distance views towards the mountains and ridgelines within Lam Tsuen Country Park. Pockets of woodland planting throughout this lowland area conceal other development and enhance a strong rural character. The DP (SPS South of Ma Tso Lung) would appear in the middle ground of the view across the open field in the foreground just beyond several isolated tree clumps.											

Remarks: The *approximate closest viewing distance to the proposed schedule 2 DP* is measured from the edge of the VSR group to the closest built form proposed within the DP.

12B.12 Magnitude of Visual Change

The potential sources of visual impact due to the Project are described in **Section 12B.4 & 5**. They will create varying levels of visual impact during the construction and operation phases in relation to the DP, due to factors such as obstruction of views, degradation of the visual quality of existing views and visual incompatibility with the surrounding visual context.

The magnitude of visual change is largely dependent on a number of factors as outlined in the methodology. In general, the magnitude of change will reduce the further a VSR is from the Project.

Detailed engineering design of built elements in the NDA is on-going at this stage therefore, the structures shown in the photomontages may change as detailed design is refined.

Table 12B.12.1 details the magnitude of change in relation to DP 5.

Table 12B.12.1 - Magnitude of visual change for VSRs due to Schedule 2 DP5 in KTN NDA

Remarks: The approximate closest viewing distance to the proposed NDA is measured from the edge of the VSR group to the closest built structure proposed within the DP.

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
	KVP8	Ying Kong Tsuen Village	Local	DP5 SPS South of Ho Sheung Heung	Nil	275	Small	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Small	Small
		<div>Description of Key Impacts during Construction and Operation</div> <p>Vegetation clearance within the footprint of the site will be visible during the construction period however, due to the elevation of this view it is unlikely that views of any ground works would be possible. In operation it is predicted that the south eastern elevation of the SPS and associated perimeter wall would be partly visible through the trees.</p> <p>As a result of the small scale nature of the development, it is considered that the compatibility of the work in construction and operation would be fair. In the future the NDA development would for the backdrop to the SPS which would further enhance its compatibility.</p> <p>Due to the limited size of the proposed built form and the wide angle of the views across this open landscape, the magnitude of change during construction would be small, as the built form is likely to remain partly visible from this point during operation the magnitude of change would remain small.</p>													
Y	KVP9 (K6b)	Ho Sheung Heung	Local	DP5 SPS South of Ho Sheung Heung	Partial	100	Small	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Small	Negligible
		<div>Description of Key Impacts during Construction and Operation</div> <p>Vegetation clearance within the footprint of the site will be visible during the construction period however, due to the elevation of this view it is unlikely that views of any ground works would be possible. In operation it is predicted that the north tip of the roof structure would be visible over the top of the low vegetation in the intervening ground in the view.</p> <p>As a result of the small scale nature of the development, it is considered that the compatibility of the work in construction and operation would be fair. In the future the SPS would be fully integrated into the surrounding NDA development which would further enhance its compatibility.</p> <p>Due to the limited extent of the building that would be visible and the disturbed nature of the landscape in the foreground, the magnitude of change during construction would be small, reducing to negligible during operation.</p>													

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
								Description of Impacts during Construction and Operation							
Y	KVP12	Ma Tso Lung Shun Yee San Tsuen Village	Local	DP5 SPS South of Ma Tso Lung	Partial	300	Small	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Small
<u>Description of Key Impacts during Construction and Operation</u> Vegetation clearance and ground works are likely to be visible during the construction period in the middle ground of the view however, due to the sloping topography; lower level views of the development may be concealed. In operation it is predicted that the northern elevation of the perimeter wall would be visible including the internal SPS building roof structure. Initially the development would appear in an area which undeveloped and rural in appearance, in this regard it is considered that the development would have a poor compatibility during construction. The KTN NDA development will form an urban backdrop in the future; in this case the compatibility is likely to be fair. Due to the limited size of the building and the broad panoramic nature of the views across this open landscape, the magnitude of change during construction would be small , as the built form is likely to remain partly visible from this point during operation the magnitude of change would remain small .															

12B.13 Significance of Visual Impacts

Based on the sensitivity assessment of VSRs as described in **Section 12B.11** and the magnitude of change they might experience described in **Section 12B.12** the potential significance of the unmitigated visual impacts from DPs during the construction and operation are provided in **Table 12B.13.1** using the matrix given in the methodology, and taking into account site visits to the area.

Residual impact significance is also determined in this Section, considering the mitigation measures described in full in **Section 12B.9**.

Figures 12.55.4a, 4b, 7a and 7b provide representative photomontages showing the predicted view from selected viewpoints depicting existing conditions, Day 1 of Operation Phase without Mitigation Measures, Day 1 of Operation Phase with Mitigation Measures and Year 10 of Operation Phase with Mitigation Measures.

Table 12B.13.1 - Significance of Visual Impacts for DP5

VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	VSR Type	VSR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
KVP8	Ying Kong Village	Local	Residential - Low Rise	High	Small	Small	Moderate	Moderate	2, 4, 11,16, 17	9, 10, 11, 12, 17	Slight	Slight	Insignificant
KVP9 (K6b)	Ho Sheung Heung	Local	Residential - Low Rise	High	Small	Negligible	Moderate	Negligible	2, 4, 11, 16, 17	9, 10, 11, 12, 17	Slight	Insignificant	Insignificant
KVP12	Ma Tso Lung Shun Yee San Tsuen Village	Local	Residential - Low Rise	High	Small	Small	Moderate	Moderate	2, 7, 9, 10, 11, 16, 17	7, 9, 10, 11, 16, 17	Slight	Slight	Insignificant

The significant visual impacts due to each SPS are provided below together with a description of the effectiveness of the recommended mitigation measures.

VSRs in very close proximity with more entire views will experience slightly more prolonged impacts as development works will occupy a greater proportion of the view and screening works / visual mitigation will require an establishment period before they take full effect.

VSRs in the vicinity of KVP 8 Ying Kong Village and KVP 9 Ho Sheung Heung and KVP 12 Ma Tso Lung Shun Yee San Tsuen Village would all experience moderate adverse visual impacts prior to mitigation in relation to the development during the construction stage, given that these are close hand views and the high sensitivity of these residential type VSRs. Screen hoarding works around the perimeter of the works area and light control during construction will assist in reducing visual impact together with protection and preservation of existing tree cover where possible. Measures to enhance the visual quality of the architectural form, textures, finishes and colours of the proposed SPS buildings and boundary treatment are considered to be effective in the visual integration of the buildings into the existing and future landscape setting especially during the construction and early operational stages. The treatment of the SPS facades and boundary should also reflect the materials and architectural styles of the surrounding proposed development in order to maximise visual integration. Vertical greening around the perimeter walling will also help to break up the uniform surfaces. A green roof will help to reduce the visibility of roofscape from elevated viewpoints. Compensation / screen planting will also be required around the perimeter of the buildings to break up the visibility of structures.

Due to the small extent of structure that would be visible from KVP9, the impact would reduce to insignificant at operation day 1 as the visual impact would principally be associated with the construction operations.

As elevations of the proposed structures will remain partially visible from KVP 8 and 12, slight adverse impacts will remain at operation day 1. These will reduce to insignificant by operation year 10 when screen planting and vertical greening will have taken full effect.

In the case of DP Package B, it is considered the potential visual impacts would be acceptable.

12B.14 Conclusion

12B.14.1 Landscape Character Areas

In summary for the LCAs, KLCA 2 Rural and Urban Peripheral Village Landscape and KLCA-5 Lowland Agricultural Landscape are both predicted to experience insignificant impacts during construction and operation due to the limited influence such small works areas would have

on the wider LCAs. In both cases it is considered that through landscape mitigation measures that these structures can quickly be assimilated into the landscape and there would be no significant adverse residual impacts.

Mitigation measures in terms of limiting impacts on existing vegetation and topography have been recommended as best practice measures to ensure a high quality development for both LR and LCAs which insignificant impact have been identified.

12B.14.2 Landscape Resources

In summary, KLR 1.3 Sheung Yue River is predicted to experience slight adverse impacts prior to mitigation. It is considered that mitigation measures proposed which consist of minimising topographical change and enhancement planting along the embankment of Sheung Yue River, the significance of impact will reduce to insignificant in the construction and operation stage.

KLR 8.3 Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Range Foothills is predicted to experience slight adverse impacts during construction, prior to mitigation. It is considered that mitigation measures proposed which consist of preserving and protecting trees where possible, transplanting trees which cannot be retained insitu and compensating plating directly around the SPS will reduce this impact to insignificant in the construction and operational stage.

KLR 9.3 Agricultural Lands in Shek Tsai Leng, Tong Kok and Fung Kong is also predicted to experience slight adverse impacts during construction, prior to mitigation. It is considered that mitigation measures proposed which consist of preserving and protecting trees where possible, transplanting trees which cannot be retained insitu and compensating plating directly around the SPS will reduce this impact to insignificant in the construction and operational stage.

All other LR would experience insignificant impacts during construction and operation.

12B.14.3 Visual Impact

The significant visual impacts due to each SPS are provided below together with a description of the effectiveness of the recommended mitigation measures.

VSRs in very close proximity with more entire views will experience slightly more prolonged impacts as development works will occupy a greater proportion of the view and screening works / visual mitigation will require an establishment period before they take full effect.

VSRs in the vicinity of KVP 8 Ying Kong Village and KVP 9 Ho Sheung Heung and KVP 12 Ma Tso Lung Shun Yee San Tsuen Village would all experience moderate adverse visual impacts prior to mitigation in relation to the development during the construction stage, given that these are close hand views and the high sensitivity of these residential type VSRs.

Screen hoarding works around the perimeter of the works area together with light control during construction will assist in reducing visual impact together with protection and preservation of existing tree cover where possible. Measures to enhance the visual quality of the architectural form, textures, finishes and colours of the proposed SPS buildings and boundary treatment are considered to be effective in the visual integration of the buildings into the existing and future landscape setting. The treatment of the SPS facades and boundary should also reflect the materials and architectural styles of the surrounding proposed development in order to maximise visual integration. Vertical greening around the perimeter walling will also help to break up the uniform surfaces. A green roof will help to reduce the visibility of roofscape from elevated viewpoints. Compensation / screen planting will also be required around the perimeter of the buildings to break up the visibility of structures.

Due to the small extent of structure that would be visible from KVP9, the impact would reduce to insignificant at operation day 1 as the visual impact would principally be associated with the construction operations.

As elevations of the proposed structures will remain partially visible from KVP 8 and 12, slight adverse impacts will remain at operation day 1. These will reduce to insignificant by operation year 10 when screen planting and vertical greening will have taken full effect.

12B.14.4 Cumulative impacts

12B.14.5 KTN NDA

The assessment of impacts in relation to LRs and LCAs in this section has considered the construction of the Schedule 2 DPs in isolation so that it is possible to identify and quantify their specific influences and contributions to potential landscape and visual impacts within the wider NDA project. In general the construction footprint of the Schedule 2 DPs are significantly smaller than the Schedule 3 components and the associated impacts on LRs and LCAs are also far smaller. When considered together the impact of the Schedule 2 projects would not alter the outcome of the Schedule 3 assessment as this has taken into the account the same LRs/LCAs within broadly the same study area.

In terms of visual impact, the majority of the DPs will be integrated directly within or around the KTN NDA therefore in operation, they will be entirely screened from external views and would not generate any adverse visual impacts.

12B.14.6 Agreement No. CE38/2010(CE) Planning Study on Liantang/Heung Yuen Wai Cross-boundary Control Point and its Associated Connecting Roads in Hong Kong – Feasibility Study.

A new Boundary Control Point (BCP) is proposed to be constructed at Liantang/Heung Yuen Wai together with its connecting roads and other associated works. This project is remote from this DP and therefore would not generate any additional impact.

12B.14.7 Agreement No. CE53/2008(CE) Planning and Engineering Study on Development of Lok Ma Chau Loop - Investigation

The LMC Loop eastern connection road lies within the study area of KTN NDA; this will link to DP 4 (KTN NDA Road D1 to D5) distributor road south of Ma Tso Lung. This road would basically comprise a continuation of the DP4 works further to the north. This project is remote from this DP and therefore would not generate any additional impact.

12B.14.8 Widening of Tolo Highway/ Fanling Highway between Island House Interchange and Fanling (Stage 2)

This project will interface with DP1 Fanling Bypass Eastern section to the south east of Fanling. The tentative completion date of the project is from Yr 2015 to Yr 2018 but is still under review by HyD. This project is remote from this DP and therefore would not generate any additional impact.

12B.14.9 Construction of cycle tracks and the associated supporting facilities from Sha Po Tsuen to Shek Sheung River.

This project will interface with DP5 SPS south of Ho Heung Sheung however It is considered that these cycleway would be highly compatible with the DP works and that no significant negative impacts would be generated.

12B.14.10 Overall Conclusion

Due to the very small construction footprint and relative low sensitivity of the LRs and LCAs affected and limited number of associated VSRs of this DP, it is considered that potentially adverse landscape and visual impacts can be controlled through the implementation of construction and operational mitigation measures. The most effective measures in both locations arise from consideration of the architectural details and choice of materials, at the detailed design stage, so that the buildings would complement the future urban environment. Screen planting would be

integrated into the proposed amenity planting within the surrounding landscape areas, also compensating for any tree losses during the construction stage. Vertical greening measures and application of green roofs will assist with visual integration during the early operational stages, to help break up the appearance and uniformity of roofscape, building facades and boundary treatments.

In this case it is considered that the SPS within DP 5 would be acceptable in terms of landscape and visual impacts.

12C DP Package C

12C.13 Introduction

The following section presents the assessment of DPs 7, 11 and 13 only; see **Table 12.16.2** for details of how each package has been divided.

The components of DP Package C are summarised in **Table 12C.1.1** below.

Table 12C.1.1 - Schedule 2 DP Package C

DP Package C			
7	Utilization of Treated Sewage Effluent (TSE) from Shek Wu Hui Sewage Treatment Works (SWHSTW)	F4	<p>An activity for the reuse of treated sewage effluent from a treatment plant.</p> <p>Three facilities are included:</p> <p>Site for utilisation of TSE at SWH STW (FLN Site A2-3).</p> <p>KTN Flushing Water Service Reservoir (KTN Site G1-4).</p> <p>FLN Flushing Water Service Reservoir (FLN Site D4-1).</p>
11	Shek Wu Hui Sewage Treatment Works - Further Expansion (SWHSTW)	F1	Sewage treatment works with an installed capacity of more than 15,000 m ³ per day.
13	New Sewage Pumping Stations (SPSs) in FLN NDA	F3	<p>A sewage pumping station---(b) with an installed capacity of more than 2000 m³ per day and a boundary of which is less than 150 m from an existing or planned residential area or educational institution.</p> <p>4no. SPS are included:</p> <ul style="list-style-type: none"> (1) SPS south of Fu Tei Au (FLN Site A1-6). (2) SPS off Man Kam To Road (FLN Site B2-3). (3) SPS south of Wa Shan (FLN Site B1-4). (4) SPS opposite Sacred Hill (FLN Site C2-3).

12C.14 Review of Planning and Development Control Framework

This section provides an overview of the HKSAR Government's development intentions, statutory land-use and planning within the Study Areas, specifically from landscape and visual standpoints. It considers relevant, published studies, such as the HK2030 Study, OZPs, and DPA Plans. This information has been considered in relation to the relevant revised RODP of the NDAs and their Layout Plans with the aim of assessing whether the Project can fit into the receiving planning framework.

12C.14.1 Design measures adopted within the Schedule 2 Designated Projects

The Schedule 2 DPs form the key infrastructure developments to support the future development and population growth within KTN and FLN NDAs. KTN and FLN NDAs will provide a mix of housing types as well as basic infrastructure and community facilities. The development opportunities and constraints of the Schedule 2 DPs is presented in **Section 2.4.1**, these have informed the development and consideration of alternative infrastructure options which are presented in **Section 2.4.2**. A summary of the key design rationale for each project is provided below:

DP7 - Utilization of TSE at SWHSTW

The Treated Sewage Effluent (TSE) from the SWHSTW will be reused for non-potable uses such as toilet flushing, landscape irrigation and make-up water for district cooling system (DCS).

To fulfil the stringent water safety standards, additional treatment of the TSE via chlorination will be required. A Chlorine Contact Tank (CCT), approximately 35m x 15m x 2.3m (high) will be constructed at the north-western side of the existing SWHSTW for carrying chlorination and de-chlorination processes. After polishing treatment, the reclaimed water produced from the TSE reuse system will be conveyed to the distribution system by newly a proposed pumping station, approximately 15m x 10m in plan and 8m high located within the site. The distribution system consists of rising mains, new flushing water service reservoirs in KTN and FLN, and distribution system up to individual development sites. Other storage facilities will include 2no liquid chlorine tanks (3m x 3m) and 2no sodium bisulphite tanks (2m x 2.5m). A large proportion of the site would be set aside for car parking.

The DP has been sited next to the existing SWHSTW and its proposed extension site for practical operational reasons of being close to the incoming TSE. It is also logical to group these facilities together due to their potential conflicts with other land uses such as residential. In addition, the form, massing and scale of the proposed facilities would be

in keeping with the existing sewage treatment plant and large scale slaughter house buildings which are adjacent.

A preliminary layout is provided on **Figure 12.52.71**.

Kwu Tung North and Fanling North Flushing Water Service Reservoirs

A key functional component of the TSE system is the construction of storage reservoirs to provide the necessary water pressure and header volume; these developments have been included within the DP7 category for this reason. To meet the required capacity, two Flushing Water Service Reservoirs are proposed, one to serve each of the NDAs.

The reservoirs are located within local highpoints in close proximity to the proposed NDA boundaries for operational reasons in terms of a practical distribution network and to achieve adequate water pressure. In KTN NDA, the facility has been situated close to the proposed freshwater service reservoir so that road access can be shared and where alterations to natural terrain will occur, that this would generally be localised within one area rather than spread across the local landscape.

The FLN Flushing Water Service Reservoir has been located based on similar principals as the KTN facility however; it will be located close to the existing Tong Hang Service Reservoir at the southeast of FLN NDA.

The detailed design of these facilities should adopt a robust approach to minimising land take to reduce the potential for construction of engineered slopes and disruption to natural terrain. With respect to the proposed top water levels and founding levels, a cut slope formation of about 38m and 62m high for KTN and FLN flushing water service reservoirs respectively is envisaged. Based on preliminary stability assessment, the proposed cut / fill slope angle would not exceed 40° to satisfy the requirement of minimum Factor of Safety of 1.4.

The majority of the covered reservoir structure sits below ground, not more than 6m deep, on a levelled site. Both reservoirs are approximately 76m x 30m in dimension. Minor operational buildings, access shafts and support facilities will also be included. Vehicular access is also required for service personnel. The pipe distribution network for Treated Sewage Effluent will be under planned or existing roads and hence the impact on landscape resources is considered negligible.

A preliminary layout for each reservoir is provided on **Figure 12.52.62 and 12.52.75**.

DP11 – Shek Wu Hui Sewage Treatment Works – Further Expansion (SWHSTW) The existing SWHSTW is a secondary STW with design capacity of 93,000m³/day, serving the North District sewerage catchment (Sheung Shui and Fanling areas). In order to cope with the natural and planned population growths within the sewerage catchment, SWHSTW is proposed to be further expanded by phases within the existing and adjacent extension sites, reaching an ultimate capacity of

190,000m³/day. At the same time, the treatment level of SWHSTW should also be upgraded to tertiary level in order to meet the “no net increase in pollution loading to Deep Bay” requirement.

The exact design details and sequence of the SWHSTW upgrading scheme is subject to refinement under separate study being conducted by DSD under Agreement No CE40/2012(DS).

For operational reasons a site adjacent to the existing STW (i.e. Site A2-3) is selected. Construction works to upgrade the existing plant will take place within the existing footprint of the treatment works. As stated in relation to DP7 above, it is also logical to group these facilities together due to their potential conflicts with other land uses, such as residential. In addition, the form, massing and scale of the proposed facilities would be in keeping with the existing sewage treatment plant and large scale slaughter house buildings which are adjacent. The proposed facilities include:

- Dewatering house – single storey, 40m x 50m in dimension.
- A series of 10 storage tanks (6no sludge digester tanks and 4no sludge holding tanks), all approximately 15m diameter and 8m high.
- 2no gas holding tanks, approximately 15m diameter and 8m high.
- Combined Heat and Power (CHP) facility, single storey approximately 15m x 10m in dimension.
- Internal access roads.

A preliminary layout is provided on **Figure 12.52.71**.

DP 13 - New Sewage pumping stations (SPS) in FLN NDA

There will be four new SPSs inside FLN NDA linking to the SWHSTW. These are SPSs south of Fu Tei Au, SPS off Man Kam To Road, SPS south of Wa Shan and SPS opposite Sacred Hill.

The layout and footprint of the SPS (except SPS off Man Kam To Road) have been set back from the river frontage to reduce their visibility and retain connectivity of riverside access paths. The internal layout and configuration of the structures has been rationalised to minimise land take. The structures are also located, where operationally feasible, close to or integrated within the proposed development to avoid visual clutter.

The SPS off Man Kam To Road is presently within an area of open storage, the location has been determined to coincide with future development so that it is well integrated. As with the other SPS, the internal layout and configuration of the structures has been rationalised to minimise land take.

Generally these buildings follow a standard format, that is, external perimeter fence or wall (approx. 3m high), internal access road with turning head and 5m high pumping station building enclosing the

pumping plant. The buildings are rectangular single storey with a flat roof; the alignment of perimeter walling varies slightly according to each site depending on existing boundary constraints and site configuration.

Preliminary layout plans are provided on **Figure 12.52.91 to 94.**

12C.14.2 Existing Outline Zoning Plans (OZPs)

The review of the OZPs has included a review of the Plans as well as the accompanying Notes and Explanatory Statements. The DP sites and study areas have been superimposed onto existing OZPs and DPAs to determine the potential influence on the existing zoning. The study area and site boundaries for DPs 7, 11 and 13 have been combined on **Figure 12.50.3.**

12C.14.3 Fanling North (FLN) DPs

The FLN DPs 7, 11 and 13 study areas are covered by the following OZP/DPA Plan documents:

- Approved Kwu Tung North OZP No. S/NE-KTN/8
- Approved Ma Tso Lung and Hoo Hok Wai Development Permission Area Plan No. DPA/NE-MTL/2.
- Approved Hung Lung Hang OZP No. S/NE-HLH/7.
- Draft Fanling/Sheung Shui OZP No. S/FSS/17.
- Approved Fu Tei Au and Sha Ling OZP No. S/NE-FTA/12.
- Approved Kau Lung Hang OZP No. S/NE-KLH/11.
- Draft Lung Yeuk Tau and Kwan Tei South OZP No. S/NE-LYT/15.
- Approved Hok Tau OZP No. S/NE-HT/5.

Table 12C.2.1 summarizes the areas of existing zoning types which will be directly affected by the site boundary of each DP. In some cases, as the DPs are located within or traverse different OZP/DPA areas, this has been highlighted in the tables accordingly.

Table 12C2.1- Schedule 2 Designated Projects 7, 11 and 13

Zoning Type	OZP/DPA number and extent of zoning within the site boundary that will undergo change (ha)	Comments on Major land use changes
DP7 – Utilisation of Treated Sewage Effluent (Including KTN Flushing Water Service Reservoir and FLN Flushing Service Water Reservoir		
Green Belt (GB)	DPA/NE-MTL/2 1.21 S/FSS/17 1.27 S/NE-KLH/11 0.85	Approximately 1.21ha of this zoning will be modified for the construction of the Kwu Tung North Flushing Water Service Reservoir. Approximately 1.27ha will be modified for utilisation of treated sewage effluent adjacent to the proposed Shek Wu Hui STW site. Approximately 0.85ha would be modified for the construction on the Fanling North Flushing Water Service Reservoir.
DP11 – Shek Wu Hui Sewage Treatment Works – Further Expansion.		
Green Belt	S/FSS/17 3.33	Approximately 3.33ha of this zoning type will be modified to the north east of the existing STW.
Other Specified Uses (OU)	S/FSS/17 9.72	Approximately 9.72ha of this zoning type will be affected by the upgrading and expansion works, the future land use matches the present function.
DP13 – New Sewage Pumping Stations in FLN NDA		
Agriculture (AGR)	S/NE-FTA/12 0.46	The following approximate areas would be affected by the proposed SPSs. SPS south of Fu Tei Au: 0.16ha SPS south of Wa Shan: 0.15ha SPS opposite Sacred Hill: 0.15ha
Green Belt (GB)	S/FSS/17 0.09ha	Approximately 0.09ha of this zoning type will be modified on the SPS site located north of Ha Pak Tsuen, off Man Kam To Road.

12C.14.3.1 Summary

In summary, the DPs would principally modify green belt and agricultural zones. In general this would mean these proposed land uses would not be overly compatible with the current planning and development control framework. The construction and operational footprint of the SPS sites under DP13 are relatively small and it is considered that this would help to minimise the potential land use conflict, whereas the reservoir sites and sites for TSE and STW expansion are of a larger scale which would generate a higher level of conflict.

12C.15 Landscape Baseline Conditions

According to the Study Brief (ESB-176/2008) baseline review comprises the identification of all existing LR and LCA within 500m of the DP boundaries.

The overall Study Area for all the DPs is very generally natural and rural. Complex LRs can be classified into different major categories, as follows:

- LR1 – Channelized Water Course
- LR2 – Water Course
- LR3 – Water Pond
- LR4 – Marsh/ Wetland
- LR5 – Plantation
- LR6 – Hillside Woodland
- LR7 – Lowland Woodland
- LR8 – Shrubland/Grassland Mosaic
- LR9 – Agricultural Land
- LR10 – Open Space / Recreational Area
- LR11 – Urban Development Area
- LR12 – Rural Development Area
- LR13 – Industrial / Open Storage
- LR14 – Major Transportation Corridor

The LCAs are classified as follows:

- LCA1 Natural Hillside Landscape
- LCA2 Rural and Urban Peripheral Village Landscape
- LCA3 Urban Development Landscape
- LCA4 Industrial Landscape
- LCA5 Lowland Agricultural Landscape

- LCA6 Major Transportation Corridor Landscape
- LCA7 Major Water Course Corridor Landscape

The landscape resources and landscape character areas of each NDA are described in further detail below, together with their sensitivity.

12C.15.1 Broad Brush Tree Survey

A Broad brush tree survey has been carried out within the study areas identifying around 100 trees which would be affected by these DPs. Major tree species in the vicinity include *Acacia confusa*, *Acacia auriculiformis*, *Araucaria heterophylla*, *Bauhinia blakeana*, *Ficus virens*, *Ficus microcarpa* and *Leucaena leucocephala*. These trees are mainly focused around the SWHSTW and proposed SPS locations.

12C.15.2 Schedule 2 DPs 7, 11 and 13 Baseline Landscape Resources and Landscape Character Areas

The baseline LRs and LCAs of FLN DPs 7, 11 and 13 are detailed along with their sensitivity, figures presenting this information are set out below:

Figure 12.51.3 presents LRs

Figures 12.51.13 to 18 presents LRs enlarged plan versions.

Figures 12.51.47 to 56 for representative images of LRs.

Figure 12.52.3 presents LCAs.

Figures 12.52.9 and 10 for representative images of LCAs.

Table 12C.3.1 - Landscape Resources and Their Sensitivity- FLN NDA (DP 7, 11 and 13)

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR 1 - Channelized Water Course					
Refers to modified water courses channelized with concrete or grasscrete, or with gabion-fortified banks, water courses undergoing such channelization. This LR includes both large channelized river water courses as well as some much smaller concrete lined water courses associated with agricultural land. This LR also includes some walkways along the larger water course and the vegetation associated with the water course, both within the channel and along the banks as well as the ridge of the banks. The vegetation mainly consists of grasses and shrubs, but also includes trees in some areas as detailed further in the individual LR descriptions. Within the Study Area of the DPs this LR includes sections of Ng Tung River, Shek Sheung River, Sheung Yue River and Ma Wat River and is one of the prominent landscape features running across a large part of the Study Area.					
1.1	Ng Tung River (Fanling District)	Medium	Medium	Medium	Medium
Ng Tung River (Fanling District) runs in an east-west direction in the FLN NDA Study Area. It collects water from Ma Wat River in the east, then Shek Sheung River and Sheung Yue River further west and finally empties into the Shenzhen River outside the study area. Ng Tung River is modified with grasscrete banks and tree planting is found in its immediate vicinity. Dominant plantation tree species are <i>Acacia auriculiformis</i> and <i>Acacia confusa</i> . Other trees also recorded include <i>Ficus virens</i> and <i>Leucaena leucocephala</i> . The river also includes a nullah in the south of the Study Area and some small channels linking through culverts under the banks of the main channel to smaller channelized watercourses which connect to drainage systems and sometimes to more natural watercourses.					
This resource is reasonably tolerant to change and its sensitivity is medium.					
1.2	Shek Sheung River	Medium	Medium	Medium	Medium
Shek Sheung River collects water from the south and flows north, joining the Sheung Yue River west of the Sheung Shui Slaughter House. There is another branch of Shek Sheung River that splits from Ng Tung River and flows round the south of the Shek Wu Hui Sewage Treatment Works. Water drained from Tin Ping San Tsuen low land area flows into this branch after passing through a floodwater storage area. This LR is mainly a grasscrete banked, trapezoidal channel, formed for the purpose of flood protection of the Fanling and Kwu Tung areas. Water partially dries out during the dry season and there is only a small amount of water at the base of the channel, with grass on either side. There are grasses and shrubs along the river's embankment also, as well as trees planted along both sides in many sections of the river. The dominant tree species are exotic, including <i>Acacia auriculiformis</i> , <i>Acacia confusa</i> , <i>Eucalyptus</i> spp. and <i>Leucaena leucocephala</i> . Native trees of lower abundance can also be found, e.g. <i>Celtis sinensis</i> , <i>Cinnamomum camphora</i> , <i>Cleistocalyx operculatus</i> , <i>Ficus microcarpa</i> , <i>Ficus virens</i> and <i>Sapium sebiferum</i> .					
Overall this river is relatively tolerant to change and its sensitivity is considered to be medium.					
1.3	Sheung Yue River	Medium	Medium	Medium	Medium
This LR sits outside the works area and will not be affected. The Study Area of FLN NDA covers a short section of Sheung Yue River on the west where it drains water from Ho Sheung Heung and other areas in Kwu Tung. It joins Shek Sheung River before flowing into Ng Tung River. Its banks are fortified with a rigid lining of stone masonry among which grasses grow sparsely between the stone blocks. At ground level, planted trees are found along both sides of the river. Most of the dominant trees are exotic, including species such as <i>Acacia auriculiformis</i> , <i>Acacia confusa</i> , <i>Eucalyptus</i> spp. and <i>Leucaena leucocephala</i> . Other trees include the native species <i>Cinnamomum camphora</i> , <i>Ficus microcarpa</i> , <i>Ficus virens</i> and <i>Macaranga tanarius</i> .					
This river is reasonably capable of accommodating change and its sensitivity is considered to be medium.					
1.4	Ma Wat River	Medium	Medium	Medium	Medium
This LR sits outside the works area and will not be affected. Ma Wat River runs across the southeast part of the FLN NDA Study Area, passing through industrial, rural and agricultural areas. It joins Ng Tung River near Kan Lung Tsuen. Water in the channel decreases significantly during the dry season when its concrete bottom is often partly exposed and dry. There is grasscrete along both its banks, where <i>Imperata koenigii</i> is one of the dominant grasses. Tree planting consisting of large and mature trees is found in the immediate vicinity of this river. Dominant tree species are <i>Acacia confusa</i> , <i>Ficus microcarpa</i> , <i>Melia azedarach</i> and <i>Leucaena leucocephala</i> . Trees with lower abundance include native species (<i>Bauhinia blakeana</i> , <i>Celtis sinensis</i> , <i>Macaranga tanarius</i> and <i>Sapium sebiferum</i>) and exotic (<i>Casuarina equisetifolia</i> and <i>Pterocarpus indicus</i>) species. Overall this river is relatively tolerant to change and its sensitivity is considered to be medium.					
1.6 (KLR-1.4)	Water Course Network in Long Valley	Medium	Low	High	Medium
This LR sits outside the works area and will not be affected. This LR describes a network of waterways in the Long Valley area which eventually connect and flow into a box culvert near the Kwu Tung Road junction with Castle Peak Road. The channels are mainly vertically-sided concrete channels which are vital for irrigation purposes but have little vegetation. The riparian vegetation comprises common and widespread herb species. This LR has a reasonable ability to accommodate change, being a man-made network of water channels, but overall it is vital to the Long Valley agricultural area and its sensitivity is considered to be medium.					
FLR 2 – Water Course					
Refers to natural or semi-natural water courses, including short sections with concreted banks. This LR also includes vegetation associated with the water course, both within the streams and along the banks as well as in the immediate vicinity. The vegetation mainly consists of grasses and shrubs, but also includes some trees in certain areas such as the upland streams, as detailed further in the individual LR descriptions. The vegetation often provides a subtle transition between this LR and its surrounding LR(s). Within the Study Area of the DPs, this LR includes watercourses running down from different hills into lowland areas.					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
2.1	Natural Stream in Tin Ping Shan Agricultural Land	Medium	Medium	Medium	Medium
Refers to a natural stream passing through Tin Ping Shan (Sacred Hill) agricultural land and finally flowing into the channelized Shek Sheung River. This is a narrow stream with grasses and climbers overgrowing along its banks. The grasses mainly include <i>Bidens alba</i> , <i>Polygonum chinense</i> and <i>Oxalis corymbosa</i> . Although parts of this stream are more natural, much of it passes through development areas and is adjacent to open storage areas. It is degraded by pollution while some sections of the stream are fortified by concrete banks. This LR has medium tolerance to change and its sensitivity is considered to be medium.					
2.2	Natural Stream at Cham Shan	Medium	Medium	Low	Medium
This LR sits outside the works area and will not be affected. This natural stream comes from Cham Shan and flows down to the lowland rural area in the northwest of the FLN NDA Study Area. It is not perennial and water flow may cease during the dry season. The banks of this stream is overgrown with common grasses such as <i>Alocasia odora</i> , <i>Bidens alba</i> and <i>Panicum maximum</i> , particularly in the upstream sections where it flows through extensive grasslands. Within the downstream sections in lowland rural areas, its banks are partially paved in places and the water quality is low as rubbish is commonly found near and in the stream. This LR is not of high quality but it is relatively intolerant to change. The sensitivity is considered to be medium.					
2.3	Natural Streams at Lung Shan	Medium	Medium	Low	High
This LR sits outside the works area and will not be affected. This LR refers to natural streams located at the foothill of Lung Shan and running through all heavily vegetated areas. The streams are intermittent and cease flowing during the dry season. Grasses and climbers grow along their banks. These include <i>Alocasia odora</i> and <i>Cuscuta chinensis</i> as well as some invasive species such as <i>Mikania micrantha</i> . This LR is relatively intolerant to change and its sensitivity is considered to be high.					
2.5 (KLR-2.2)	Natural Streams at Tai Shek Mo	Medium	Medium	Low	High
This LR sits outside the works area and will not be affected. These natural streams run off Tai Shek Mo, where rainwater flows down from the hill and reaches lowland areas such as Ngam Pin. Some of these streams are intermittent and cease flowing during the dry season. Grasses and shrubs overgrow the banks of these streams including common grasses such as <i>Alocasia odora</i> , <i>Wedelia trilobata</i> and <i>Panicum maximum</i> . This LR is relatively intolerant to change and its sensitivity is considered to be high.					
2.6 (KLR-2.4)	Natural Streams at Ma Tso Lung	High	Medium	Low	High
This LR sits outside the works area and will not be affected. This LR describes natural streams running off Ma Tso Lung to the lowland area in Ma Tso Lung San Tsuen in the northwest of KTN NDA Study Area. Plants include fruit trees (i.e. <i>Dimocarpus longan</i> and <i>Litchi chinensis</i>) and native understory species (e.g. <i>Lophatherm gracile</i> and <i>Alocasia odora</i>) and the other vegetation is affected by the exotic climber species <i>Mikania micrantha</i> and herb species <i>Bidens alba</i> and <i>Alocasia macrorrhizos</i> . The section at Ma Tso Lung is regarded as ecologically important due to its naturalness and well developed bank area. This LR is relatively intolerant to change and its sensitivity is considered to be high.					
FLR 3 – Water Pond					
Refers to freshwater ponds. The ponds are often associated with agricultural land and used for irrigation, and punctuate the traditional field pattern. Some ponds are also found near residential or developed areas, and have aesthetic; landscape value and some are fish ponds. This LR also includes vegetation associated with the ponds, both within and around the banks as well as in the immediate vicinity. The vegetation mainly consists of grasses and shrubs, with scarce trees. These water ponds are mainly in Fu Tei Au and Wai Loi Tsuen in FLN NDA, but also in the area overlapping with KTN, including Ho Sheung Heung and Long Valley.					
3.1	Ho Sheung Heung and Long Valley Water Ponds	Medium	Medium	Low	High
This LR sits outside the works area and will not be affected. This LR refers to part of the area of ponds in Ho Sheung Heung and Long Valley that are covered by the Study Area of FLN NDA. Ponds in Ho Sheung Heung retain water most of the time including during both the dry and wet seasons, while those in Long Valley are periodically emptied by local farmers during the dry season for management purposes and irrigation. The bunds of these ponds are vegetated by grasses and low shrubs, as well as some fruit trees such as <i>Musa x paradisiaca</i> , <i>Litchi chinensis</i> , <i>Mangifera indica</i> , <i>Dimocarpus longan</i> and <i>Citrus maxima</i> . The ponds within this LR are of medium quality with common fruit trees present and are relatively intolerant to change. The sensitivity of this LR is considered to be high.					
3.2	Water Ponds within the Closed Area	Medium	Medium	Low	High
This LR sits outside the works area and will not be affected. Part of the north FLN NDA study area lies within the Closed Area and the water ponds of this LR are mainly located north of Sheung Shui Water Treatment Works and beside the Sha Ling Livestock Waste Control Centre but also at the northern base of Cheung Po Tau. In the west, they are generally large ponds covering a reasonably large area while those in the east are large but more isolated. Some of them are active fish ponds, some inactive fish ponds and some connect with wet agricultural land in their vicinity. This LR is relatively intolerant to change and its sensitivity is considered to be high.					

Id. No.		Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
3.3		Fu Tei Au Water Ponds	Low	Medium	Low	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This is a group of water ponds located between Fu Tei Au Road and Ng Tung River. The ponds were most likely used for commercial fish farming and for irrigation purposes in the past and have now mainly been abandoned. Common grasses (e.g. <i>Bidens alba</i> and <i>Pennisetum</i> spp.) and small trees (e.g. <i>Bombax ceiba</i> and <i>Leucaena leucocephala</i>) grow densely along the banks. Trees are planted or naturally have established themselves on the pond bunds; these include <i>Macaranga tanarius</i>, <i>Litchi chinensis</i>, <i>Dimocarpus longan</i> and <i>Ficus hispida</i>.</p> <p>The quality and significance of this LR is relatively low, but it is intolerant to change. Its sensitivity is therefore considered as medium.</p>						
3.5		Wai Loi Tsuen Water Pond	Low	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR is on the periphery of Wai Loi Tsuen serving as the moat of this traditional village. It has concrete banks and is connected with Shek Sheung River to its west.</p> <p>Since this is a LR having significant artificial characteristics, it is relatively tolerant to change, however the moat has cultural landscape significance and therefore its sensitivity is considered to be medium.</p>						
<p>FLR 4 – Marsh / Wetland</p> <p>Refers to freshwater marsh/ wetland landscape resources. Some of them are found at old river meanders which have been truncated during river channelization and retraining, overgrown with herbaceous vegetation and often with some areas of seasonal or permanent open water.</p> <p>Within the Study Area of the DPs, this LR is found along certain sections of Ng Tung River and Sheung Yue River as well as in Long Valley agricultural land.</p>						
4.1		Marshes in Long Valley and near Tsung Yeun	Medium	High	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to part of the Long Valley marshes and marshes near Tsung Yeun that are covered by the Study Area of FLN NDA to its west. They are located within Long Valley agricultural land and in the agricultural land near Tsung Yeun and include both permanent wet marshes and well vegetated marshes. For the permanent wet marshes, they used to be fish ponds or used for irrigation purpose and have now been abandoned and are not actively managed. These marshes contain water all year round; dense emergent vegetation is present in the marshes and shows relatively high diversity including <i>Phragmites karka</i>, sedges <i>Cyperus iria</i> and <i>Kyllinga aromatica</i>, and herbs and climbers <i>Ipomoea aquatica</i>, <i>Polygonum barbatum</i> and <i>Polygonum lapathifolium</i>. For the well vegetated marshes, a large portion of the wetland area is covered with rich and moist topsoil, colonised by common and widespread species such as <i>Brachiaria mutica</i>, <i>Panicum maximum</i>, <i>Bidens alba</i>, <i>Ludwigia perennis</i> and the common wetland fern <i>Cyclosorus interruptus</i>.</p> <p>This LR is fairly rare and is relatively intolerant to change and its sensitivity is considered to be high.</p>						
4.2		Mitigation Wetland	Medium	High	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>Several plots of marsh are located along Ng Tung River and Sheung Yue River. They were formerly meanders of the river and were isolated during the river channelization. To mitigate the ecological impact resulting from channelization, these areas are now managed by a government department to provide marsh habitat, mainly for wetland dependent wildlife and are hence a wetland landscape resource. Wetland plants and riparian vegetation have been planted and include <i>Commelina diffusa</i>, <i>Hedychium coronarium</i>, <i>Ludwigia perennis</i> and <i>Nelumbo nucifera</i>. Bamboos and trees are also planted along the bunds, e.g. <i>Acacia auriculiformis</i>, <i>Cinnamomum camphora</i>, <i>Hibiscus tiliaceus</i> and <i>Ilex rotunda</i>.</p> <p>This LR had medium quality and maturity and in general marsh habitats are reasonably rare in Hong Kong. Additionally this LR is relatively intolerant to change so its sensitivity is considered to be high.</p>						
<p>FLR 5 – Plantation</p> <p>Refers to medium sized and larger clusters of trees that have been planted and are distinct from natural woodland in terms of species composition since they have been planted by man. Common tree species in this LR include <i>Ficus virens</i>, <i>Ficus microcarpa</i>, <i>Acacia confusa</i>, <i>Bombax ceiba</i>, <i>Macaranga tanarius</i> and <i>Melaleuca quinquenervia</i>. Further details are given in the individual LR descriptions.</p> <p>Within the Study Area of the DPs, this LR is found in the vicinity of Wai Loi Tsuen, Ha Pak Tsuen, On Kwok Villa and Noble Hill.</p>						
5.1		Plantation in the Vicinity of Wai Loi Tsuen	Medium	Medium	High	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>A mixture of native and exotic trees is planted around the moat of Wai Loi Tsuen and its vicinity, serving as a good screen for the road and industrial area to the west of the village. Compared to those trees planted immediately along the Shek Sheung River in its vicinity, trees in this plantation have a relatively higher diversity, including native species (<i>Bauhinia blakeana</i>, <i>Celtis sinensis</i> and <i>Ficus microcarpa</i>) and exotic species (<i>Acacia confusa</i>, <i>Aleurites moluccana</i>, <i>Bombax ceiba</i>, <i>Cassia siamea</i>, <i>Casuarina equisetifolia</i>, <i>Eucalyptus citriodora</i>, <i>Grevillea robusta</i>, <i>Lagerstroemia speciosa</i> and <i>Melaleuca quinquenervia</i>).</p> <p>This LR has medium amenity value and relatively high capacity to accommodate change and its sensitivity is considered to be medium.</p>						

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
5.2	Ha Pak Tsuen Plantation	High	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>A patch of plantation is located to the east of Ha Pak Tsuen and a number of large mature trees within the village park area near Mun Hau Tsuen. Trees are densely planted within the village as well as along the nearby roads leading to the village to enhance the landscape value of this area. Among these planted trees, Chinese Banyan <i>Ficus microcarpa</i> is one of the most prominent trees as most of them are mature and large. Other tree species include native (<i>Macaranga tanarius</i>) and exotic (<i>Acacia confusa</i> and <i>Bombax ceiba</i>) species.</p> <p>Although this resource was originally man made, it now has many large, mature trees in a traditional village setting and this is harder to recreate, so it has a relatively low capacity to accommodate change. Its sensitivity is considered to be high.</p>					
5.3	Plantation in the Vicinity of On Kwok Villa and Noble Hill	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>There is significant plantation on the periphery of On Kwok Villa and Noble Hill mainly along Tin Ping Road, Lung Sum Road, Ma Sik Road and a branch of Ng Tung River. Trees planted in this area are reasonably mature and dense. They include native (<i>Ficus virens</i>, <i>Ficus microcarpa</i>, <i>Bauhinia blakeana</i> and <i>Macaranga tanarius</i>) and exotic (<i>Bombax ceiba</i>, <i>Cassia siamea</i>, <i>Delonix regia</i>, <i>Eucalyptus</i> spp., <i>Ficus religiosa</i> and <i>Melaleuca quinquenervia</i>) species.</p> <p>Although trees in this LR provide a certain high landscape value, the trees are set amongst modern residential areas. The LR was originally a man-made resource and is able to be recreated fairly easily meaning it has a reasonable capacity to accommodate change. Its sensitivity is therefore considered to be medium.</p>					
5.5	Plantation in the Vicinity of Hak Ka Wai	Medium	Medium	High	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This area of plantation is largely associated with the narrow Sheung Yue River channel and the villages of Hak Ka Wai and Tsung Pak Long, including in their playground areas and public facilities. This plantation generally comprises exotic tree species dominated by <i>Acacia confusa</i>. Other species in lower abundance include exotic species (<i>Acacia auriculiformis</i>, <i>Acacia mangium</i>, <i>Araucaria heterophylla</i>, <i>Casuarina equisetifolia</i>, <i>Livistona chinensis</i> and <i>Leucaena leucocephala</i>) and native species (<i>Cinnamomum camphora</i>, <i>Ficus microcarpa</i>, and <i>Macaranga tanarius</i>).</p> <p>This LR has a relatively high capacity to accommodate change and its sensitivity is considered to be medium.</p>					
<p style="text-align: center;">FLR 6 - Hillside Woodland</p> <p>Refers to woodland areas largely scattered over hillsides, including at the base of hills and associated patches of woodland. This LR is predominantly composed of native tree species and is generally located some distance from intense human activities (except at the base of hills where it often borders rural development areas), growing naturally with some understory vegetation. Common tree species in this LR include <i>Acacia confusa</i>, <i>Macaranga tanarius</i>, <i>Ficus microcarpa</i>, <i>Dimocarpus longan</i>, <i>Celtis sinensis</i>, <i>Cinnamomum camphora</i> and <i>Ficus hispida</i>. Further details are given in the individual LR descriptions.</p> <p>Within the Study Area of the DPs, this LR is largely scattered at the foothill of Cham Shan, Wa Shan and Lung Shan, Tai Shek Mo.</p>					
6.1	Sheung Shui Water Treatment Works Hillside Woodland	High	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>Several small patches of woodland lie at the eastern base of the hillside surrounding Sheung Shui Water Treatment Works. Trees grow naturally and densely in this area and dominant species include <i>Macaranga tanarius</i>, <i>Celtis sinensis</i>, <i>Cinnamomum camphora</i>, <i>Melia azedarach</i> and <i>Leucaena leucocephala</i>.</p> <p>This LR is relatively mature and intolerant to change. The sensitivity of this LR is considered to be high.</p>					
6.2	Cham Shan and Wa Shan Hillside Woodland	High	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to the relatively large and continuous woodlands along the foothills of Cham Shan and Wa Shan to their western and southern sides, bordering shrubland/grassland on the higher ground above and rural villages and agricultural lands in the lowland area below. Due to limited human disturbance, these trees are mature in medium to large sizes. Dominant tree species include both native and exotic ones. Dominant native trees are <i>Celtis sinensis</i>, <i>Cinnamomum camphora</i>, <i>Ficus hispida</i>, <i>Ficus variegata</i> var. <i>chlorocarpa</i>, <i>Rhus succedanea</i>, <i>Sapium discolor</i>, <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i>. Dominant exotic species include <i>Melia azedarach</i>, <i>Dimocarpus longan</i>, <i>Syzygium jambos</i>, <i>Leucaena leucocephala</i>, <i>Acacia confusa</i> and <i>Casuarina equisetifolia</i>.</p> <p>This LR is considered to be relatively mature and of high quality and it has little capacity to tolerate change. The sensitivity of this LR is considered to be high.</p>					
6.4	Hillside Woodland at Lung Shan and Wa Mei Shan	High	Medium	Low	High
<p>This LR covers part of the woodlands on the foothill of Lung Shan to the northeast of Fanling Highway and the foothill of Wa Mei Shan to the southwest in the vicinity of Wo Hop Shek. This resource includes mature woodland trees growing on hillside slopes, including native species (<i>Celtis sinensis</i>, <i>Macaranga tanarius</i>, <i>Ficus hispida</i>, <i>Ficus microcarpa</i> and <i>Litsea glutinosa</i>) and exotic species (<i>Acacia confusa</i>, <i>Eucalyptus</i> spp., <i>Dimocarpus longan</i>, <i>Melia azedarach</i> and <i>Syzygium jambos</i>).</p> <p>The quality and landscape value of this LR is relatively high, with little tolerance to change and its sensitivity is considered to be high.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
6.5 (KLR-6.3)	Hillside Woodland in Ma Tso Lung, Tit Hang and Fung Kong	High	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to the narrow, winding and largely continuous patches of woodland in the hillside areas of Ma Tso Lung, Tit Hang and Fung Kong. Woodlands in these areas predominantly border uphill shrubland/grassland areas and lowland woodlands, and sometimes adjoin rural and industrial areas. Due to limited human disturbance, these trees are mature in medium to large sizes. Dominant tree species include both native and exotic ones. Dominant native trees are <i>Ficus hispida</i>, <i>Cinnamomum camphora</i>, <i>Rhus succedanea</i>, <i>Celtis sinensis</i>, <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i>. Dominant exotic species include <i>Melaleuca quinquenervia</i>, <i>Leucaena leucocephala</i>, <i>Melia azedarach</i>, <i>Acacia confusa</i> and <i>Casuarina equisetifolia</i>.</p> <p>This LR is considered to be relatively mature and of high quality and it has little capacity to tolerate change. The sensitivity of this LR is considered to be high.</p>					
6.6 (KLR-6.2)	Tai Shek Mo Hillside Woodland	High	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>Several small patches of woodland are scattered among the southern flank of Tai Shek Mo. Dominant species include exotic trees <i>Acacia confusa</i> and <i>Casuarina equisetifolia</i> as well as native trees <i>Celtis sinensis</i>, <i>Cinnamomum camphora</i>, <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i>.</p> <p>This LR is considered to be relatively mature and of high quality and it has little capacity to tolerate change. The sensitivity of this LR is considered to be high.</p>					
<p style="text-align: center;">FLR 7 – Lowland Woodland</p> <p>Refers to woodland growing on low ground (generally <40 mPD), often found near rural village areas of human activities in small, fragmented patches, with differing tree species according to location. Common tree species found in this LR include <i>Dimocarpus longan</i>, <i>Cinnamomum camphora</i>, <i>Macaranga tanarius</i>, and <i>Leucaena leucocephala</i>. Further details are given in the individual LR descriptions.</p> <p>Within the Study Area of the DPs, this LR is found in Vernon Pass, Fu Tei Au, Hung Kiu San Tsuen, Sacred Hill, Ling Hill and Ling Shan Tsuen.</p>					
7.2	Lowland Woodland at Fu Tei Au and Sheung Shui Water Treatment Works	Medium	Medium	Medium	Medium
<p>This LR refers to several patches of woodland in Fu Tei Au area and in the close vicinity of Sheng Shui Water Treatment Works. They are generally surrounded by or bordering rural areas and abandoned agricultural lands and so receive moderate human disturbance leading to the vegetation within the LR being of lower quality. Trees in this resource are not diverse and dominated by <i>Dimocarpus longan</i>, <i>Hibiscus tiliaceus</i>, <i>Celtis sinensis</i>, <i>Macaranga tanarius</i> and <i>Cinnamomum camphora</i>.</p>					
This is a landscape resource of medium quality and has a medium tolerance to change, making its sensitivity medium.					
7.3	Hung Kiu San Tsuen Lowland Woodland	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to the lowland woodlands in the vicinity of Hung Kiu San Tsuen, east of Man Kam To Road. These woodlands are largely surrounded by adjacent industrial/open storage areas and therefore potentially suffer from disturbance by human activities making this resource of lower quality than it would otherwise be.</p> <p>These trees are of medium to large sizes, and are dominated by both native and exotic species. The most abundant native species include <i>Celtis sinensis</i>, <i>Ficus microcarpa</i>, <i>Ficus hispida</i>, <i>Bischofia javanica</i>, <i>Cinnamomum camphora</i>, and <i>Macaranga tanarius</i>, while exotic species include <i>Averrhoa carambola</i>, <i>Casuarina equisetifolia</i>, <i>Leucaena leucocephala</i>, <i>Dimocarpus longan</i> and <i>Melia azedarach</i>.</p> <p>This LR has a medium amenity value, relatively low quality, a medium tolerance to change and its sensitivity is considered to be medium.</p>					
7.4	Sacred Hill Lowland Woodland	Medium	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR is located to the east of Tin Ping Shan Tsuen, adjacent to the large Tin Ping Shan Tsuen agricultural lands. Common tree species include <i>Celtis sinensis</i>, <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i>.</p> <p>This LR is relatively intolerant to change and its sensitivity is considered to be high.</p>					
7.5	Ling Hill and Ling Shan Tsuen Lowland Woodland	High	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to the woody areas near the intersection of Ma Sik Road and Jockey Club Road. These woodland patches are on the periphery of and associated with Ling Shan Tsuen. There is an old temple (Sam Sheung Temple) located in this village and it is also surrounded by this woodland. Trees in this resource are fairly large and mature including both native and exotic species. They are native (<i>Celtis sinensis</i>, <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i>) and exotic (<i>Acacia confusa</i>, <i>Delonix regia</i> and <i>Dimocarpus longan</i>).</p> <p>This is a natural resource of high quality and is not able to accommodate change. Its sensitivity is considered to be high.</p>					

Id. No.		Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
7.7		Lowland Woodland near Tai Tau Leng	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to a small patch of woodland located near Tai Tau Leng. This woodland patch is largely surrounded by adjacent industrial/open storage areas and therefore potentially suffered from disturbance by human activities making this resource of lower quality than it would otherwise be. Common tree species include <i>Leucaena leucocephala</i>, <i>Acacia confuse</i> and <i>Cinnamomum camphora</i>.</p> <p>This LR has a medium amenity value and medium tolerance to change. Its sensitivity is considered to be medium.</p>						
FLR 8 - Shrubland / Grassland Mosaic						
<p>Refers to a mosaic of shrubland and grassland which is usually large in size and uniform in appearance. This LR is typical of the fire-maintained hill-slopes in Hong Kong and common grass species include <i>Miscanthus sinensis</i>, <i>Neyraudia</i> spp. and <i>Panicum</i> spp. Further details are given in the individual LR descriptions.</p> <p>Within the Study Area of the DPs, this LR is found largely on hillsides, particularly on Tai Shek Mo, Wa Shan, Cham Shan and Lung Shan, as well as some relatively lowland areas to the west of the Study Area.</p>						
8.1		Shrubland/Grassland Mosaic along Sheung Yue River and Ng Tung River	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>These shrublands /grasslands are all located in lowland areas and in the vicinity of man-made resources such as channelized watercourses, rural and urban development areas. They are waste grounds through lack of maintenance and have been gradually colonized by weeds and climbers.</p> <p>This LR is of low landscape value and amenity and is relatively tolerant to change. Its sensitivity is low.</p>						
8.2		Fu Tei Au Shrubland/Grassland Mosaic	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>This resource is located north of Fu Tei Au Road surrounding the Sheung Shui Water Treatment Works. It is dominated by grasses such as <i>Miscanthus sinensis</i> and <i>Miscanthus floridulus</i> and some small trees including <i>Rhus succedanea</i> and <i>Macaranga tanarius</i> are also present in this area.</p> <p>This LR is of low landscape value and amenity and is relatively tolerant to change. Its sensitivity is low.</p>						
8.3		Shrubland/Grassland Mosaic at Cham Shan and Wa Shan	Medium	Low	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This is an extensive and continuous resource in the northeast of the Study Area of FLN NDA, i.e. the hillsides of Cham Shan and Wa Shan. Similar to most of the other hillsides in Hong Kong, this large area of grassland is also maintained by hill fires and mainly colonized by grasses. Grass and herb species such as <i>Miscanthus sinensis</i>, <i>Neyraudia reynaudiana</i> and <i>Panicum</i> spp. are widespread within the resource. Nevertheless, some patches close to Cheung Po Tau which are undergoing vegetation succession towards shrubland, support higher plant diversity and show more complex floristic structure. Shrubs commonly found in these areas include <i>Melastoma candidum</i>, <i>Rhus succedanea</i>, <i>Rhodomyrtus tomentosa</i> and <i>Sapium discolor</i>.</p> <p>This LR can re-establish itself fairly easily and is therefore considered to be relatively tolerant to change but is of medium quality and maturity. Its sensitivity is considered to be medium.</p>						
8.4		Shrubland/Grassland Mosaic at Lung Shan	Medium	Low	Medium	Medium
<p>This LR is part of the extensive shrubby grassland on the uplands of Lung Shan. It merges into hillside woodland at the foothills and is sometimes adjacent to the urban development area. Similar to the other hilly shrubland/grassland in Hong Kong, this LR is maintained by periodical hill fires.</p> <p>This LR can re-establish itself fairly easily and is therefore considered to be relatively tolerant to change. It is of medium quality and maturity and its sensitivity is considered to be medium.</p>						
8.5 (KLR- 8.3)		Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Range Foothills	Medium	Low	Medium	Medium
<p>This LR is an extensive area of shrubby grassland on the uplands of Tai Shek Mo and the foothills of the Western Ranges covering Ma Tso Lung. It largely merges into hillside woodland in at the foothills and is sometimes adjacent to some rural and urban development areas. Similar to the other hilly shrubland/grassland in Hong Kong, this LR is also maintained by periodical hill fires.</p> <p>This LR can re-establish itself fairly easily and is therefore considered to be relatively tolerant to change. Its sensitivity is medium.</p>						
FLR 9 - Agricultural Land						
<p>Refers to land used for agriculture including crops and orchards as well as ornamental plant nurseries. This LR contains a small number of structures such as small irrigation ponds, green houses, equipment sheds and small/ narrow hard paved areas. It not only contains agricultural vegetation but also some scattered non-agricultural vegetation including some shrubs and trees. It is often an intermediary between areas of development and natural areas.</p> <p>Within the Study Area of the DPs, this LR is mainly found in Tin Ping Shan, Ma Shi Po and Sheung Shui Wa Shan.</p>						

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
9.1	Agricultural Lands in Ho Sheung Heung and Long Valley	High	High	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>The Study Area of FLN NDA covers small parts of the agricultural lands in Ho Sheung Heung and Long Valley in the west. They are mainly wet agricultural lands, including both active and inactive fields. Common wetland crops in Long Valley and Ho Sheung Heung share a high similarity in their species composition, including Ipomoea aquatic, Nasturtium officinale, Eleocharis dulcis, Oryza sativa and Trapa bispinosa. Fruit trees are present along field bunds including Dimocarpus longan, Litchi chinensis and Magnifera indica.</p> <p>This LR is of good quality and a significant local resource due to its large size, long history and crop production. Although agricultural land is normally relatively easy to re-establish in the right environment, this particular LR would be relatively hard to recreate in Hong Kong given its size and it being largely not fragmented. Its sensitivity is high.</p>					
9.2	Fu Tei Au Agricultural Land	Medium	Medium	Medium	Medium
<p>Agricultural land in Fu Tei Au area is partially abandoned. Common vegetables such as Brassica parachinensis and Lactuca sativa are grown in the active fields. In those inactive fields, grasses dominated by Miscanthus spp. have colonized the land, with some isolated shrubs and trees growing along the previous field bunds without management. Those trees include Dimocarpus longan, Litchi chinensis and Magnifera indica. The active portion of this LR is of high quality.</p> <p>This LR provides some green space between the hard surfaces of industrial/open storage areas or rural development areas making it locally reasonably important. Agricultural land is fairly easy to re-establish in the right environment and especially given some of this land is abandoned, it has medium tolerance to change. The LR is considered to have medium sensitivity.</p>					
9.3	Agricultural Land between Ng Tung River and Shek Sheung River	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>A patch of active agricultural land is located in the flood area between Ng Tung River and Shek Sheung River, north of Po Wan Road. This agricultural land probably connected with the agricultural land in Tin Ping Shan Tsuen (FLR-9.4) in the past but has now been separated by an open storage area between them (FLR-13.1). The area of this LR is relatively small, but of reasonable quality.</p> <p>This LR has medium value and being agricultural land has medium ability to tolerate change in the right environment. It is considered to have medium sensitivity.</p>					
9.4	Tin Ping Shan Tsuen Agricultural Land	Medium	Medium	High	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>Tin Ping Shan Tsuen agricultural land is located on the north of Tin Ping Shan Tsuen. This is a reasonably sized, un-fragmented area of agricultural land and more than half the fields remain active. In addition to open farmlands, there are also some orchards in which small fruit trees including Musa x paradisiaca, Litchi chinensis and Dimocarpus longan are cultivated.</p> <p>The LR is mature and established and of high quality, yet since it is agricultural land, in the right environment it could be recreated, meaning it has reasonable capacity to accommodate change. It is considered to have medium sensitivity.</p>					
9.5	Agricultural Land at Sheung Shui Wa Shan	Medium	Medium	High	Medium
<p>This LR is located in the lowland area at the foot of Wa Shan, along the eastern bank of Ng Tung River. Much of the agricultural land within this area is abandoned with weeds, climbers, isolated shrubs and banana trees and some other invasive trees (e.g. Leucaena leucocephala) colonizing the land. However some areas are still active and this land is a green resource neighboring village developments.</p> <p>This LR has medium landscape quality and maturity. Being agricultural land it is relatively tolerant to change in the right environment. It is considered to have medium sensitivity.</p>					
9.6	Agricultural Land in Wu Nga Lok Yueng, Siu Hang San Tsuen, Siu Hang Tsuen and Shek Wu San Tsuen	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This resource is mainly situated in the east of the Study Area of FLN NDA and includes both active and inactive agricultural lands. A variety of crops are grown in the active fields, including Benincasa hispida, Pisum sativum, Solanum melongena and Lactuca sativa. As a result of human activity of cultivation, vegetation on the bunds of these fields is poorly developed and is dominated by common herbs such as Ageratum conyzoides, Hedyotis diffusa and Kyllinga brevifolia and Lobelia chinensis and few shrubs and trees are present. Some of the inactive fields, due to the lack of management and disturbance for a long time, are beginning to develop naturally into grassland or shrubby grassland with colonisation by herbs, isolated shrubs and small trees.</p> <p>This LR is mature and established yet the land is highly fragmented and overall the LR is not of high quality. Since it is agricultural land, in the right environment it could be re-established, meaning it has reasonable capacity to accommodate change. It is considered to have medium sensitivity.</p>					
9.8 (KLR-9.4)	Other Agricultural Lands in KTN	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to several small and fragmented agricultural lands in different locations within the study area of KTN, including Chau Tau Tsuen, Pak Shek Au, Yin Kong, Kam Tsin and Tai Tau Leng. Most of these agricultural lands have been wholly or partly abandoned and grass and shrubs now grow in the fields. For those fields remaining active, common crops cultivated by farmers include Brassica parachinensis and Lactuca sativa. This LR has low to medium value in terms of crop production and is relatively tolerant to change. It is considered to have medium sensitivity.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR 10 - Open Space / Recreation Area					
Refers to areas that provide recreational use either in the form of playground areas or sports pitches. There is vegetation associated with this LR, as well as landscaped planting. Within the Study Area of the DPs, this LR is found at North District Sports Ground and Lo Wu Saddle Club.					
10.1	North District Sports Ground	Medium	Medium	High	Low
This LR sits outside the works area and will not be affected. North District Sports Ground is a multi-purpose sports ground located between Jockey Club Road and Tin Ping Road. Facilities provided in this sports ground include natural grass football field, running track, covered grandstand, public leisure pool, basketball/volleyball courts and outdoor and indoor tennis courts. Dominant amenity trees planted in this LR include Ficus microcarpa, Bauhinia blakeana and Bauhinia variegata. This LR has medium landscape value and due to its man-made nature and high percentage of hard landscape, has a high capacity to accommodate change. Apart from the open grass pitch, it has little planting and therefore soft landscape is relatively low value. Overall its sensitivity is considered to be low.					
10.3	Lo Wu Saddle Club	Medium	Medium	Medium	Medium
This LR sits outside the works area and will not be affected. Situated along Ho Sheung Heung Road, Lo Wu Saddle Club has more than 50 years of history and has a stable complex including grass riding arenas as well as clubhouse facilities and a schooling arena. Trees found within this LR include Melia azedarach, Celtis sinensis and Delonix regia. This LR is of relatively high quality and amenity value. The artificial elements can accommodate change relatively easily but the fields where horses graze are less able to accommodate change. Overall this LR’s sensitivity is considered to be medium.					
FLR 11 – Urban Development Area					
Refers to urbanized areas which are heavily developed with considerable hard paved surfaces and limited landscaped areas. These LRs consist mainly of large clusters of medium to high density buildings with a high degree of related infrastructure and often with some high rise developments, with some associated facilities such as post office, police station, hospital, restaurants, supermarkets etc. The LR also includes work sites where construction is ongoing, or sites being cleared/ formed prior to development of a structure that would form part of an urban area. Vegetation in this LR is mainly landscape planting with scattered amenity shrubs and trees, some small public green spaces and private gardens. Within the Study Area of the FLN NDA, this LR broadly covers Lo Wu Correctional Institution and the large urban development areas in Sheung Shui and Fanling.					
11.1	Lo Wu Correctional Institution	Low	Low	High	Low
This LR sits outside the works area and will not be affected. Lo Wu Correctional Institution is located in between Ho Sheung Heung Road and the foothills of Tai Shek Mo. Buildings in this LR are medium-rise and roads are all hard-paved. Tree planting is limited within the institution although it does have some green roofs. This LR has a high ability to accommodate change due to its man-made nature and is considered to have low sensitivity.					
11.2	Sheung Shui Urban Development Area	Low	Low	High	Low
This LR sits outside the works area and will not be affected. This LR refers to the northeastern part of the Sheung Shui town centre. There are high-rise public (e.g. Tin Ping Estate) and private (e.g. Tsui Lai Garden, On Kwok Villa and Noble Hill) estates, training centres, multi-storey car park and home for the aged located in this area. Gardens and small scale playgrounds can also be found associated with those residential blocks. Amenity trees and shrubs are planted and well maintained to enhance the environment, and the dominant tree species are Melaleuca quinquenervia, Acacia confusa, Bauhinia blakeana, Ficus microcarpa, Bombax ceiba, Cassia siamea, Eucalyptus citriodora and Phoenix roebelenii. This LR has low landscape value and due to its man-made nature, has a high capacity to accommodate change. Its sensitivity is considered to be low.					
FLR 12 - Rural Development Area					
Refers to traditional villages, modern villages and small scale residential areas dominated by domestic structures (mainly of 2-3 stories) interwoven with roads and paths, There are some Ancestral Halls, shrines and temples, and this LR may also contain some facilities such as small police stations, post offices, and covered water reservoirs and pumping stations and some small, managed, recreational areas (such as football and basketball pitches) and small wasteland areas either wholly or partly covered by weedy or sparse vegetation. This LR has a few small orchard areas associated with it and private gardens, as well as amenity planting among the built structures. This LR usually occurs in fragmented patches with agricultural or natural landscape resources adjacent to it. Within the Study Area of the DPs, this LR includes Ngam Pin, Fu Tei Au, Sheung Shui lowland area, Lung Yeuk Tau, Wo Hap Shek, as well as some areas at the base of Wa Shan and Lung Shan.					
12.1	Rural Development Area in Ngam Pin	Low	Medium	Medium	Low
This LR sits outside the works area and will not be affected. This LR is just located within the Closed Area. Residential buildings within the village are old and simple, mainly constructed in metal. Tall grasses grow along the roads winding between houses without management and much of the area is abandoned. This LR is considered to have low sensitivity.					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
12.2	Rural Development Area in the Vicinity of Fu Tei Au	Low	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR mainly covers the rural area between Fu Tei Au Road and Ng Tung River. Settlements in this area consist predominantly of simple and traditional houses of a single storey, some of which are fenced off. Trees are present both along the roads winding between houses and in private gardens, including <i>Dimocarpus longan</i>, <i>Macaranga tanarius</i> and <i>Aleurites moluccana</i>.</p> <p>Man Ming Temple, constructed before 1924, is located within to the south of this LR. It is a Grade 3 Historic Building which is a three-hall building, with two open corridors on the two sides of the central hall, used to access the end hall.</p> <p>This resource has limited landscape value, but some of its structures have heritage significance and therefore have little ability to accommodate change. Its sensitivity is overall considered to be medium.</p>					
12.4	Rural Development Area in Sheung Shui Lowland Area	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This is a lowland resource where a number of villages are concentrated, particularly in the western part which encompasses Wai Loi Tsuen, Man Kok Village, Mun Hau Tsuen, Po Sheung Tsuen, Ha Pak Tsuen, Chung Sum Tsuen, Tai Yuen Tsuen (collective named as Sheung Shui Heung/Sheung Shui Wai). The eastern part of this LR includes Tin Ping Shan Tsuen. Fung Kai School with its associated football pitch and several basketball pitches and some mature trees are also located at the centre of this LR.</p> <p>Those villages are well established, consisting of some modern housing of 2-3 storeys and some traditional housing and include one declared monument and two graded historical buildings. Liu Man Shek Tong Ancestral Hall, a declared monument, was built by Liu Man Shek Tong in 1751 at Mun Hau Tsuen. This typical three-hall two-courtyard building is decorated by plaster mouldings, wood carvings and murals of auspicious motifs and pictures. One of the graded historic buildings is Liu Ying Lung Study Hall, situated at Po Sheung Tsuen which is a confirmed Grade 1 Historic Building. It was renovated in 1923 and was once the place where Spring Equinox, births and weddings were celebrated. The other is Old Sheung Shui Police Station, which is a confirmed Grade 2 Historic Building. It was one of thirteen police stations built soon after the British took over the New Territories and later became a police reporting centre and then a Junior Police Call (JPC) Club House after the new Sheung Shui Police Station was opened in 1979. Tin Ping Shan Tsuen in the east is relatively small, mainly consisting of more traditional and simple structured houses of a single storey. Most areas are hard-surfaced and have limited vegetation except those private amenity plantings.</p> <p>Given the traditional nature of much of this LR and its historical buildings, this LR is relatively intolerant to change and is considered to have medium sensitivity.</p>					
12.5	Wa Shan Rural Development Area	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to several rural development areas along the hillsides or at the foothill of Wa Shan. They are largely rural settlements including Sheung Shui Wa Shan village, Siu Hang Tsuen and Siu Hang San Tsuen. Most of these villages are undergoing transformation due to the fact that many houses have been replaced by modern housing blocks of 2-3 storeys and some new housing blocks are being constructed. This LR has limited softscape treatment but does include some trees (e.g. <i>Mangifera indica</i>, <i>Dimocarpus longan</i> and <i>Livistona chinensis</i>) and private amenity plantings (e.g. <i>Duranta erecta</i>).</p> <p>One temple is located in Siu Hang Tsuen, (Fuk Tak Temple), established some 100 years ago. The temple is for the worship of the Earth God and other gods/deities that give protection to the villagers and so is locally important. Although the temple has a 'Nil Grade' historic building value, it is at one end of the Lung Yeung Tau Heritage Trail. It is a large piece of grassland for military purpose. Many mature trees grow in the surroundings, including <i>Macaranga tanarius</i>, <i>Celtis sinensis</i>, <i>Leucaena leucocephala</i> and <i>Eucalyptus</i> spp.</p> <p>This LR is largely a man-made area but some of the historical buildings and the vegetation associated with the firing range are relatively intolerant to change. The overall sensitivity of this LR is medium.</p>					
12.7	Rural Development Area at Wo Hop Shek and Lung Shan	Low	Low	High	Low
<p>This LR includes Cyber Domaine, Tong Hang, Tong Hang Tung Chuen (at the foothill of Lung Shan), part of the Wo Hop Shek San Tsuen in Wo Hop Shek, Kau Lung Hang San Wai and Yuen Leng. It also includes the Tong Hang Fresh Water Service Reservoir that is located on the hillside of Lung Shan. Trees commonly found in this LR are <i>Melaleuca quinquenervia</i>, <i>Celtis sinensis</i>, <i>Ficus hispida</i>, <i>Leucaena leucocephala</i>, <i>Dimocarpus longan</i>, and <i>Eucalyptus citriodora</i>. This LR is dominated by domestic residencies. Its landscape amenity, significance and quality are moderate and it has a high ability to tolerate change, making its overall sensitivity low.</p>					
12.8	Rural Development Area at Ma Shi Po	Medium	Low	Medium	Medium
<p>This LR is dominated by domestic residencies. Its landscape amenity, significance and quality are medium and it has limited ability to tolerate change given the age of those old village houses and its relationship with the surrounding agricultural land, making its overall sensitivity medium.</p>					
12.9	Wu Nga Lok Yeung and Ling Shan Tsuen Rural Development Area	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR mainly refers to two patches of continuous rural development located at Wu Nga Lok Yeung as well as Ling Shan Tsuen and Good View New Village.</p> <p>Some of the construction works at Wu Nga Lok Yeung are suspended, leaving two rows of 3-storey unfinished village houses on exposed ground. Plants are generally absent from this area. The village houses in Ling Shan Tsuen and Good View New Village are relatively concentrated with large trees frequently found along the winding roads and in private gardens. These trees include <i>Celtis sinensis</i>, <i>Dimocarpus longan</i>, <i>Livistona chinensis</i> and <i>Macaranga tanarius</i>, etc.</p> <p>This LR is dominated by domestic residencies. Its landscape amenity, significance and quality are medium and it has high ability to tolerate change, making its overall sensitivity low.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
12.12 (KLR- 12.2)	Rural Development Area in Long Valley, Yin Kong, Tsung Pak Long and Hak Ka Wai	Medium	High	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR lies between the Shek Sheung River and Fanling Highway to the southeast of Long Valley. It covers three villages: Yin Kong Tsuen, Hak Ka Wai and Tsung Pak Long.</p> <p>Yin Kong Tsuen is a traditional village undergoing transformation. Some of the existing residential houses in the northern part of the village are identified as historical buildings. Earth shrines associated with Fung Shui Trees (<i>Ficus microcarpa</i> in most cases) are present including the Grade 2 listed Earth God Shrine of Kam Tsin historic building. In addition an old western styled Enchi Lodge (Grade 2 historic building) is located on the southern part of the village. Between the northern and southern parts of the village there is grassland which would have been agricultural land in the past. On the other hand, the modern aspect of Yin Kong Tsuen is presented by many well-established modern village houses as well as facilities such as small-scaled playgrounds.</p> <p>Hak Ka Wai is a traditional village with around 100 years of history. It consists of two rows of residences, an ancestral hall (the Wong Shek Chung Ancestral Hall), a study hall, an entrance gate, enclosing walls and a watch tower. This village is a Grade 1 historic building.</p> <p>Tsung Pak Long is a traditional village undergoing transformation. It contains ancestral halls, earth shrines, a school and a church in traditional style to its northwest. Most areas within this LR are hard-surfaced and have limited vegetation except those private amenity plantings, in which fruit trees <i>Dimocarpus longan</i>, <i>Carica papaya</i> and <i>Citrus reticulata</i> and landscaping shrub <i>Duranta erecta</i> and <i>Murraya paniculata</i> are commonly found.</p> <p>The historic buildings located in this LR, particularly the relatively large area of Hak Ka Wai village, cannot be easily recreated and this LR is relatively intolerant to change. Overall it is considered to have high sensitivity.</p>					
12.14 (KLR-12.11)	Rural Development Area in Ma Tso Lung	Low to Medium	Medium	Low	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to the rural area at Ma Tso Lung on the northwest of the KTN NDA Study Area. It mainly covers two villages, i.e. Ma Tso Lung San Tsuen and Shun Yee San Tsuen, which are relatively small, mainly consisting of more traditional houses of a single storey. Trees associated with this area include some fruit trees such as <i>Diospyros kaki</i>, <i>Musa x paradisiaca</i> and <i>Dimocarpus longan</i> as well as other native and exotic trees such as <i>Bauhinia blakeana</i>, <i>Leucaena leucocephala</i>, and <i>Bombax ceiba</i>.</p> <p>Although these structures cannot be recreated easily and have low ability to accommodate change, their landscape quality and maturity are not high and overall this LR has medium sensitivity.</p>					
12.15 (KLR-12.10)	Lo Wu Rifle Range	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>Lo Wu Rifle Range is located between Fung Kong Shan and the Tai Shek Mo mountain. It is a large piece of grassland for military purpose. Many mature trees grow naturally in the surroundings, including <i>Bauhinia blakeana</i>, <i>Macaranga tanarius</i>, <i>Celtis sinensis</i> and <i>Leucaena leucocephala</i>.</p> <p>This LR is a man-made area but it is green land not hard surface and so has a medium tolerance to change. The sensitivity of this LR is medium.</p>					
<p>FLR 13 - Industrial / Open Storage</p> <p>Refers to areas which are heavily adapted for human industrial use, such as factory facilities, waste processing plants and other industrial buildings, often with some open areas for storage, parking or other associated activities. These areas have small roads within them and some concrete drainage channels. There is very little existing vegetation within this LR.</p> <p>Within the Study Area of the DPs, this LR is geographically divided into Sheung Shui and Fanling industrial/open storage areas and will be further described individually.</p>					
13.1	Sheung Shui Industrial/Open Storage Area	Low	Low	High	Low
<p>The western part of this LR contains Sheung Shui Water Treatment Works, Sheung Shui Slaughter House, Shek Wu Hui Sewage Treatment Works as well as several warehouses and industrial buildings. Planted trees are found along the roads and dominant species include <i>Acacia auriculiformis</i>, <i>Acacia confusa</i> and <i>Leucaena leucocephala</i>.</p> <p>The rest of this LR is largely used for open storage and car parks as well as several waste processing plants but there is one recognized Tin Hau Temple (No. 41 Hung Kiu San Tsuen), but this has a ‘Nil Grade’ historic building value. Trees within this area are not actively managed and grasses occupy many places between the car parks. Tree species commonly found include <i>Leucaena leucocephala</i>, <i>Bauhinia blakeana</i>, <i>Bauhinia variegata</i>, <i>Macaranga tanarius</i>, <i>Delonix regia</i>, <i>Cassia siamea</i>, <i>Bombax ceiba</i>, <i>Syzygium jambos</i>, <i>Ficus virens</i>, <i>Mangifera indica</i> and <i>Acacia auriculiformis</i>.</p> <p>This LR has relatively low landscape amenity value and consists mostly of modern man-made structures that can be easily recreated. Its sensitivity is considered to be low.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
13.4 (KLR-13.3)	Industrial/Open Storage in Shek Tsai Leng, Tong Kok and Fung Kong	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR is located around the villages of Shek Tsai Leng, Fung Kong, Tung Fong and Tong Kok and is generally in the middle of the KTN NDA. This LR at Fung Kong falls within the Study Area of the DP. This continuous area is largely used for open storage and car parks. Also, several waste processing plants are present.</p> <p>Trees within this LR are not actively managed and grasses occupy many places between the car parks. Tree species commonly found in the area include Macaranga tanarius, Celtis sinensis, Bauhinia blakeana, Mallotus paniculatus, Ficus microcarpa, Acacia confusa, Casuarina equisetifolia, Leucaena leucocephala, Hibiscus tiliaceus, Dimocarpus longan, Livistona chinensis, Morus alba, Psidium guajava and Artocarpus macrocarpon.</p> <p>This LR predominantly consists of man-made structures which have a high capacity to tolerate change and have low landscape value. This LR is considered to have low sensitivity.</p>					
FLR 14 - Major Transportation Corridor					
Refers to MTRC railway, Fanling Highway, as well as Sha Tau Kok Road (Lung Yeuk Tau) and all the associated intersections. There is tree planting along the sides of the roads consisting of a variety of indigenous and exotic species such as Cassia siamea and Acacia confusa. In addition, there is some planting along the central divider (median) in some sections, including of amenity shrubs such as Allamanda schottii and sometimes palm trees Livistona chinensis.					
14.1	MTRC East Rail	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>The LR includes a short section of MTRC East Railway running between Sheung Shui and Lo Wu Stations. No significant planting is found along the railway lines and trees growing randomly in its vicinity are dominated by Leucaena leucocephala.</p> <p>This resource is highly utilized by the general public and well linked but it is man-made with low landscape value and a high ability to accommodate change. Its sensitivity is low.</p>					
14.3	Fanling Highway	Medium	Low	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR is a major transportation corridor connecting Fanling, Sheung Shui, Kwu Tung and other adjacent areas. It includes a short section of Fanling Highway with a reasonable amount of roadside planting with some mature tree. Species include Melaleuca quinquenervia, Bombax ceiba, Ficus microcarpa, Casuarina equisetifolia, Acacia confusa and Bauhinia blakeana.</p> <p>This is a man-made resource, and due to the roadside planting is less able to accommodate change and its overall sensitivity is considered to be medium.</p>					
14.4	MTRC near Fanling Highway	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR is small section of the MTRC East Rail line running parallel to Fanling Highway. It has no planting associated with it, only noise barriers at its edges.</p> <p>This is a man-made resource which has a high ability to accommodate change. Its overall sensitivity is considered to be low.</p>					

Table 12C.3.2 Landscape Character Areas and their Sensitivity – FLN NDA (DP7, 11 and 13)

Id. No.	Landscape Character Area (LCA)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
<u>K</u> LCA-1	Natural Hillside Landscape	High	High	Low	High
<p>Refers to large hillside areas which are dominated by shrubland, grassland and some woodland patches.</p> <p>Within the Study Area the LCA encompasses Tai Shek Mo (183 mPD), Western Range of Tai Shek Mo (Ma Tso Lung and Lok Ma Chau) (144 mPD), Ki Lun Shan (222 mPD), and Fung Kong Shan (40 mPD).</p> <p>Tai Shek Mo lies to the north of the Study Area. The primary ridgeline extends southward while the Western Range ridgeline runs approximately NE-SW, covering Ma Tso Lung and Lok Ma Chau. These two sections of LCA are separated by lower land and to their south the smaller Fung Kong Shan is located.</p> <p>Ki Lun Shan lies to the southwest of the Study Area.</p>					

Id. No.	Landscape Character Area (LCA)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLCA-1	Natural Hillside Landscape	High	High	Low	High
<p>Refers to large hillside areas which are dominated by shrubland, grassland and some woodland in places such as the ravines.</p> <p>Within the Study Area of the DPs, this LCA encompasses Tai Shek Mo (183 mPD), Fung Kong Shan (40 mPD), Cham Shan and Wa Shan to the north reaching 164 mPD and the foothills of Lung Shan to the south. Other areas of this LCA found within the study area are at Wong Kong Shan, and Ling Hill. They are at a relatively lower in height and close to human activities.</p> <p>This LCA is predominantly natural and of high quality. It is a significant LCA within the Study Area and has a low tolerance to change. Therefore its sensitivity is considered to be high.</p>					
FLCA-2	Rural and Urban Peripheral Village Landscape	Medium	Medium	Medium	Medium
<p>Refers to rural village areas and village areas on the fringes of urban developments, including relic landscapes of former villages. This LCA is dominated by small or medium sized villages with modern and traditional houses and some temples, interspersed with small agricultural plots and comprises a broad mixture of other land uses including water ponds, schools, sports grounds, and playgrounds, some open storage areas and car parks. This LCA also has some patches of woodland as well as vegetation associated with the villages and park areas.</p> <p>Within the Study Area of the DPs, this LCA is generally found at the foothills of the Tai Shek Mo, Cham Shan and Wa Shan along the northern bank of Ng Tung River such as Fu Tei Au as in other lowland areas such as Long Valley, Tsung Pak Long, Fu Tei Au; Sheung Shui Wai, Shek Wu San Tsuen, Tong Hang and Wo Hop Shek.</p> <p>This LCA is considered to have medium tolerance to change and be of moderate amenity value. Its sensitivity is therefore medium.</p>					
FLCA-3	Urban Development Landscape	Low	Low	High	Low
<p>This LCA sits outside the works area and will not be affected.</p> <p>Refers to urban areas with significant numbers of high-rise developments and extensive transport infrastructure. It also contains car parks and open areas associated with urban development such as playgrounds and small parks and sitting out areas. This LCA has limited natural vegetation but does include some man-made landscaping.</p> <p>Within the Study Area of the DPs, this LCA is found only towards the south-western boundary including Sheung Shui town centre, with buildings becoming more modern. It includes the high-rise developments such as Woodland Crest and some high rise estates such as Tin Ping Estate.</p> <p>This is an important residential landscape and has high tolerance to change. The sensitivity of this LCA is considered to be low.</p>					
FLCA-4	Industrial Landscape	Low	Low	High	Low
<p>Refers to areas comprising a broad mix of land uses including factories, utility facilities, workshops, open storage and some channelized water courses. It is normally located on low lying ground or at the base of hills and may include small and fragmented areas of residential houses and their associated agricultural land. There is little significant vegetation among this built environment, but small patches of vegetation do exist, particularly along the channelized river.</p> <p>Within the Study Area for FLN NDA this LCA is mainly comprised of factory buildings, vacant land and open storage. It includes the Fanling Industrial Area that is found between Sha Tau Kok Road and Ma Wat River channel. The Sheung Shui Slaughter House, Sheung Shui Water Treatment Works and Shek Wu Hui Sewage Treatment Works, at the west of the Study Area and the open storage uses along Man Kam To road are also included.</p> <p>This LCA contains man-made facilities that are able to accommodate change, particularly if they have been abandoned. Except for the significant planting along Ng Tung River, most areas in this LCA comprise degrade and un-made ground where vegetation has been largely removed, resulting in a low landscape amenity. Therefore, the sensitivity of this LCA is considered to be low.</p>					
FLCA-5	Lowland Agricultural Landscape	Medium	Medium	Medium	Medium
<p>This LCA sits outside the works area and will not be affected.</p> <p>Refers to large areas dominated by agricultural land (active and abandoned) with scattered small villages and low-rise buildings and may also include some fishponds and irrigation ponds. This LCA is mostly found among lowlands and floodplain areas.</p> <p>Within the Study Area for FLN NDA the key area of this LCA is found at Tin Ping Shan Valley. Tin Ping Shan (Sacred Hill) Valley is located to the west of Ng Tung River and contains abandoned agricultural fields and drained concrete fishponds as well as some active agriculture.</p> <p>The value and quality and maturity of this LCA is medium. In some locations this LCA can accommodate a reasonable level of change; its overall sensitivity is considered to be medium.</p>					

Id. No.	Landscape Character Area (LCA)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLCA-6	Major Transportation Corridor Landscape	Low	Low	High	Low
<p>This LCA sits outside the works area and will not be affected.</p> <p>Refers to major highway and railway areas, with their scattered associated buildings.</p> <p>Within the Study Area of the DPs, Fanling Highway and MTRC East Railway are major transport routes stretching in a variety of directions and located at the east, west and south boundaries of the Study Area.</p> <p>The LCA is considered to be highly tolerant to change and its sensitivity is low.</p>					
FLCA-7	Major Water Course Corridor Landscape	Medium	Medium	Medium	Medium
<p>Refers to modified water courses channelized with concrete or grasscrete and also includes some walkways along the water course and the vegetation associated with the water course, both within the channel and along the banks as well as in the ridge of the banks.</p> <p>Within the Study Area of DPs, this LCA includes sections of Ng Tung River, Shek Sheung River and Sheung Yue River.</p> <p>The landscape amenity and significance of this LCA are medium. Due to its largely man-made state, it is reasonably tolerant to change and its sensitivity is considered to be medium.</p>					

12C.15.3 Summary of Baseline Conditions

The LR within the Study Area which have been identified for their higher sensitivity are generally natural streams, woodland, marsh/ wetland, some water ponds, although other resources may also have high sensitivity due to certain characteristics.

LRs associated with natural water bodies are often considered higher value resources. With the exception of a natural stream at Cham Shan (FLR-2.2), which has banks partially paved in places and low water quality (commonly polluted with rubbish), the natural streams in FLN (in Tin Ping Shan Agricultural Land (FLR-2.1), Lung Shan (FLR-2.3), Tai Shek Mo (FLR-2.5) and Ma Tso Lung (FLR-2.6) all have high sensitivity, largely due to their intactness and low ability to accommodate change. Two pond areas which are relatively intolerant to change due to their natural qualities, those at Ho Sheung Heung and Long Valley (FLR-3.1) and within the Closed Area (FLR-3.2), are considered to have high sensitivity. In addition, all the marsh/wetland areas in FLN NDA, including those in Long Valley and near Tsung Yeun (FLR-4.1), and the mitigation wetland along Ng Tung and Sheung Yue River (FLR-4.2), are all rated as highly sensitive largely due to their rarity within a developed landscape setting, natural characteristics and sensitivity to change.

Trees are considered as a precious LR therefore, all areas of hillside woodland within the Study Area are rated as having high sensitivity. Unlike woodland within KTN, the lowland woodland around FLN is generally of low to medium quality as a result of human disturbance. The lowland woodland at Sacred Hill (FLR-7.4) and at Ling Hill/Ling Shan Tsuen (FLR-7.5) are considered to have high sensitivity as they are of better quality, more pristine and therefore less able to accommodate change. There are no OVTs in this area but one area of plantation (at Ha Pak Tsuen (FLR-5.2) is considered to have high sensitivity as a result of its maturity, number of mature tree specimens within a traditional village setting, giving it a low ability to accommodate change.

FLR8-Shrubland/Grassland Mosaic surrounds the study area such around Fu Tei Au (FLR-8.2), Cham Shan and Wa Shan (FLR-8.3). It is also commonly associated with hillsides and local prominences such as Lung Shan (FLR 8.4) and Tai Shek Mo (FLR 8.5). These LR are generally located on undeveloped areas of natural topography however they are managed using periodic fires, therefore their overall sensitivity is considered to be medium. Areas of shrubland/grassland mosaic are found along the Sheung Yue River and Ng Tung River (FLR8.1) and close to Sheung Shui STW at Fu Tei Au (FLR8.2). In this case the LR is established on man-made landscape features such as road verges or artificial watercourse channels therefore the sensitivity is considered to be low.

The FLN NDA Study Area extends to the west and touches upon the agricultural land in Ho Sheung Heung and Long Valley (FLR-9.1). While

most agricultural LRs have medium sensitivity (given it is relatively easy to create in the right environment and not overly rare in the New Territories), the agricultural land in Long Valley is unique as it forms part of a large, high quality, contiguous area which would be difficult to recreate in Hong Kong due its maturity and strong visual characteristics. This agricultural land is therefore recognized as having high sensitivity.

With regards to LCAs, Natural Hillside Landscape in FLN NDA (FLCA-1) is considered highly sensitive, largely due to its high landscape quality and inability to accommodate change. Rural and Urban Peripheral Village Landscape (FLCA-2) and Major Water Course Corridor Landscape (FLCA-7) have medium sensitivity, largely due to their moderate amenity value and medium tolerance to change. The Lowland Agricultural Landscape in this area (FLCA-5) is predominantly of medium value and considered reasonably easy to recreate given the right environment, and therefore also has medium sensitivity. The Major Transport Corridor Landscape in this area (FLCA-6) includes the southern Fanling Highway and part of the MTRC East Rail Line. Unlike in the KTN area, there is limited planting within this LCA within the FLN Study Area so it has a high ability to accommodate change and therefore this LCA has low sensitivity. Urban Development Landscape (FLCA-3) and Industrial Landscape (FLCA-4) also have low sensitivity due to their low landscape quality through human development and high ability to accommodate change.

12C.16 Details of Site Formation Impacts – Schedule 2 DPs 7, 11 and 13

DPs 7, 11 and 13 relate to the provision of new sewage related infrastructure serving the proposed KTN and FLN NDAs. A summary of the likely site formation impact for each DP is provided below:

12C.16.1 DP7 Utilisation of Treated Sewage Effluent

DP 7 comprises the construction of two separate Flushing Water Service reservoirs and extension of part of the existing Shek Wu Hui Sewage Treatment Works to provide the associated effluent reuse facilities. The proposed KTN Flushing Water Service Reservoir is located to the north east of the KTN NDA on Tai Shek Mo, east of the existing Lo Wu Firing Range. The proposed FLN Flushing Water Service Reservoir is located on the hillside slope above Tong Hang Tung Chuen, west of the existing Tong Hang Service Reservoir. Both of these reservoirs would require significant earthworks operation during the construction stage due to their location on existing hillside. Preliminary assessments suggest a cut slope formation of approximately 38m and 62m height with the proposed cut/fill slope angle not exceeding 40° based on the general safe angle of the cut slope for the service reservoirs at KTN and FLN NDAs respectively. Further studies can be conducted to reduce the extent of site formation

as far as possible during the detailed design stage after the ground investigation has been conducted.

Road access to the KTN Flushing Water Reservoir is shared with the Proposed Fresh Water Reservoir, both the reservoir and the road sit within the Schedule 3 works.

The reservoir at FLN will utilise the existing road access road to the Tong Hang Fresh Water Service Reservoir. A junction will be formed off this road requiring some modifications to the existing road surface.

The works associated with effluent reuse facilities at Shek Wu Hui STW would involve the construction of mechanical plant and associated buildings on previously levelled and cleared land adjacent to the existing STW facilities and the Sheung Shui Slaughter House.

12C.16.2 DP 11 Proposed expansion and upgrading of Shek Wu Hui Sewage Treatment Works at FLN NDA

DP 11 comprises improvements to the existing sewage treatment works and extension of the plant. Improvement works are within the existing footprint of the STW and would involve the upgrading and reorganisation of sewage treatment facilities. The extension works would occupy land immediately adjoining the STW facility currently zoned as Green Belt but used as compound and open storage facilities. STW would incorporate a dewatering house, sludge holding tanks and a combined heat and power facility. The proposed site formation levels to sewage treatment works range from +6.5mPD adjacent to Ng Tung River, to +12.0mPD adjacent to the Fu Tei Au Road at the northern boundary of the area.

12C.16.3 DP 13 New Sewage Pumping Stations in FLN NDA

DP 13 relates to the construction of 4no. Sewage Pumping Stations in the KTN NDA, these are located:

- SPS south of Fu Tei Au
- SPS off Man Kam To Road
- SPS south of Wa Shan
- SPS opposite Sacred Hill

The construction of the SPS will require the direct loss of Green Belt land for the site off Man Kam To Road, the other sites occupy land currently zoned as Agriculture. The SPS building will be approximately 5m high surrounded with fencing or walling at approximately 3m high.

12C.17 Potential Landscape and Visual Impacts

During the construction of the various components of DP7, 11 and 13, potential landscape and visual impacts will generally result from the following:

- Site clearance including demolition of structures and tree removal/transplantation.
- Site formation works including cutting and filling of natural topography (hillside) including watercourse channels.
- Stockpiling and transportation of construction and demolition materials, excavated materials, including existing topsoil, and storage of construction equipment and mechanical plant.
- Exposed rock faces and slopes as a result of formation work for flushing water reservoir site formation.
- Decommissioning of existing STW mechanical plant and construction of improvement works. Construction of new STW building and facilities.
- Construction of Sewage Pumping Station Buildings and associated internal access road and pedestrian access and boundary walling/fencing.
- Temporary structures within the Project Site including site offices, boundary fencing/hoarding and parking areas.
- Re-alignment of roads.
- Re-alignment of streams and watercourses.

During the operation phase, potential impacts will result from the following:

- Operation of new flushing water service reservoirs.
- Operation of new sewage pumping stations and TSE reuse and STW facilities.
- Residual impacts from loss of natural hillside, trees and vegetation during the construction phase.

12C.18 Landscape Impact Assessment

The landscape impact assessment has been carried out taking into consideration the baseline LRs and LCAs described in **Section 12C.3** and potential impacts described in **Sections 12C.4 and 12C.5**.

Further details of the potential landscape impacts are provided for each DP below. The magnitude of change on **FLN DP 7, 11 and 13** LRs and LCAs are presented in **Tables 12C.6.1 and 12C.6.2** below.

Landscape impacts are presented on **Figures 12.52.22 and 12.52.33 to 36**.

Table 12C.6.1 Magnitude of Change on LRs (DP 7, 11 and 13)

Note - For LRs where no impact is recorded, these have been omitted.

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR 1	Channelized Water Course											
1.1	Ng Tung River (Fanling District)	DP 7: Utilization of Treated Sewage Effluent DP11: Shek Wu Hui Sewage Treatment Works - Further Expansion (SWHSTW) DP 13: New Sewage Pumping Station	Study Area: 35.8ha / 3.5km DP Boundary: 2.25ha/ 528m	Small	Fair	Good	Temporary Medium	Permanent	Reversible	Reversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The proposed DPs will be constructed at the top of the riverbank fronting the river channel. Vegetation clearance together with soil stripping and excavation works will be undertaken at the river banks Impact of the TSE reuse facilities and Sewage Pumping Stations (except the one off Man Kam To Road) will only affect a small area of this LR and this will again mainly be at construction stage during site formation. The further expansion of the STW at A2-3 may also have an impact on a larger area of the banks and adjacent. Impacts at these sites will be during site formation initially but at operation land use will have changed only for a small area adjacent to the river itself. The river banks has already been heavily altered through channelization and alignment modifications, therefore no valuable natural features will be lost or affected. In this case the compatibility of the scheme is considered to be fair in construction due to the physical disruption and good in operation. Due to the relatively small scale of the area affected and taking into account previous highly engineered alterations to this resource the magnitude of change is considered to be small during construction and negligible in operation.										
1.2	Shek Sheung River	DP11: Shek Wu Hui Sewage Treatment Works - Further Expansion (SWHSTW)	Study Area: 25.1ha / 2.6km DP Boundary: 0.42ha / 100m	Small	Poor	Poor	Temporary Short	Permanent	Reversible	Reversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The proposed DP will be constructed at the top of the riverbank fronting the river channel. Vegetation clearance together with breaking out hard surfaces, soil stripping and excavation works will be undertaken beyond the upper bank away from the river channel. The river banks have already been heavily altered through channelization and alignment modifications; however some vegetation will be lost which is relatively rare in this landscape scenario. In this case the compatibility of the scheme is considered to be poor both in construction and operation. Due to the relatively small scale of the area affected and taking into account previous highly engineered alterations to this resource the magnitude of change is considered to be negligible.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR 6	Hillside Woodland											
6.4	Hillside Woodland at Lung Shan and Wa Mei Shan	DP7: Utilization of Treated Sewage Effluent	Study Area: 23.28 DP Boundary: 0.04	Small	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> A very small area of this LR is located within site D4-1 which is the proposed area for the Fanling North Flushing Water Service Reservoir. The trees in this very small area may be affected during site clearance and formation for D4-1 and topographical changes by filling and cutting slope up to 62 m, although the height of slope to be expose by completion is 56 m. However, the majority of this LR will remain unaffected by the Project and the overall magnitude of change is considered to be small.										
FLR 7	Lowland Woodland											
7.2	Lowland Woodland at Fu Tei Au and Sheung Shui Water Treatment Works	DP 13: New Sewage Pumping Station	Study Area: 4.8ha DP Boundary: 0.11ha	Small	Fair	Fair	Permanent	Permanent	Irreversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> A small area of woodland sits within the works area of the SPS south of Fu Tei Au. Existing trees would require felling to allow construction of the pumping station. As a result of the existing human disturbance such as abandoned agricultural lands and partly developed rural area surrounding these woodlands, the overall sensitivity is medium and the LR has some capacity to accept change. As a result the compatibility during construction and operation is considered to be fair. As a result of the small area concerned and the overall medium capacity of the LR to accept change, the magnitude of change during construction and operation is considered to be Small.										
FLR 8	Shrubland/Grassland Mosaic											
8.4	Shrubland/ Grassland Mosaic at Lung Shan	DP7: Utilization of Treated Sewage Effluent	Study Area: 22.12ha DP Boundary: 1.44ha	Small	Fair	Fair	Permanent	Permanent	Irreversible	Irreversible	Large	Larger
		<u>Description of Key Impacts during Construction and Operation</u> A small part of this LR sits within site D4-1 which is the proposed site for the Fanling North Flushing Water Service Reservoir. The area is close to the existing Fresh Water Service Reservoir at north of Tong Hang Tung and adjacent to the existing access road. The preliminary design of the reservoir and its access road, which is subject to change at the detailed design stage, suggests the site formation work required will affect a small area of this LR (1.4 ha). The highest proposed cut/ fill slopes for the reservoir will be 62 m with a maximum 40 degree angle for all slopes. The exposed slope at completion will be up to 56 m high as some of the slope will be backfilled. There will therefore be some topography changes in this area. The existing shrubland/ grassland in this area will also be lost during construction although there is potential for landscaping of the reservoir roofs and cut/ fill slopes and remediation in future. As a result of the relatively small area concerned forming part of a much larger LR and the medium capacity to accept change, the compatibility during construction and operation is considered to be fair. However, the detailed reservoir design is not yet finalised and will continue to be refined to try and reduce potential impacts. At operation this small area will be largely incompatible with the current LR and will change the land use. Despite the relatively small size of the area affected, the irreversibility of the work, the topographical changes including up to 62 m cut/fill slope above the reservoir within the hillside are considered to generate a large magnitude of change during construction and operation.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
8.5 (KLR-8.3)	Shrubland/ Grassland Mosaic in Tai Shek Mo and the Western Range Foothills	DP7: Utilization of Treated Sewage Effluent	Study Boundary: 71.2ha DP Boundary: 1.21ha	Medium	Fair	Fair	Permanent	Permanent	Irreversible	Irreversible	Large	Large
		<u>Description of Key Impacts during Construction and Operation</u> Most of this shrubland/grassland is located outside the DP boundary and the Project will have no impact on it. A small area of this large scale LR sits within site G1-4 and will require considerable site formation during construction to form the level construction platform. The preliminary design of the reservoir proposes cut/ fill slopes of up to 38m. At completion the exposed face of slope above the reservoir would be 32 m in length. The overall topography beyond this area will not be changed. The existing vegetation in these areas will be lost although there is potential for landscaping of the reservoir roofs and re-profiled slopes. However, the detailed reservoir design is yet not finalised and will continue to be refined to try and reduce potential impacts. As a result of the relatively small area concerned forming part of a much larger LR and the medium capacity to accept change, the compatibility during construction and operation is considered to be fair. Despite the relatively small size of the area affected, the topographical changes including up to 32 m cut/fill slope above the reservoir within the hillside are considered to generate an intermediate magnitude of change during construction and operation.										
FLR 9	Agricultural Land											
9.2	Fu Tei Au Agricultural Land	DP13: New Sewage Pumping Stations	Study Area: 3.61 DP Boundary: 0.04	Small	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> A very small area of this LR will be lost for the construction of the proposed SPS south Fu Tei Au. Construction works will require site clearance and filling works to achieve the required site levels. As a result of the development this area of agricultural land will be replaced with a small building and associated boundary works, in this case the compatibility is considered to be poor during construction and operation. Given the very small size of the area concerned it is considered the overall magnitude of change during construction and operation would be small.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
9.5	Agricultural Land at Sheung Shui Wa Shan	DP13: New Sewage Pumping Stations	Study Area: 8.02ha DP Boundary: 0.03	Small	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> A very small area of this LR will be lost for the construction of the proposed SPS south of Wa Shan. Construction works will require site clearance and filling works to achieve the required site levels. As a result of the development this area of agricultural land will be replaced with a small building and associated boundary works, in this case the compatibility is considered to be poor during construction and operation. Given the very small size of the area concerned it is considered the overall magnitude of change during construction and operation would be small.										
FLR 12	Rural Development Area											
12.7	Rural Development Area at Wo Hop Shek and Lung Shan	DP7: Utilization of Treated Sewage Effluent	Study Area: 33.7 DP Boundary: 0.11	Small	Good	Good	Temporary Short	Permanent	Reversible	Reversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> This LR covers the existing access road to the Tong Hang Fresh Water Reservoir. Construction works will require some reconfiguration to the existing road in order to form a new road junction to provide access to the proposed FWSR. Construction works will require breaking out of existing road surface and localized ground modeling followed by construction of new road surface. As the existing LR functions as a road and the proposed works would involve road construction, the overall compatibility during construction and operation is considered to be good. Given the good compatibility of these works, limited extent and identical function, the magnitude of change is considered to be negligible both in construction and operation.										
12.8	Rural Development Area at Ma Shi Po	DP13: New Sewage Pumping Stations	Study Area: 3.77ha DP Boundary: 0.14	Small	Fair	Fair	Temporary Short	Permanent	Reversible	Reversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The construction works for the SPS opposite Sacred Hill will impact this LR through vegetation clearance, soil stripping and cut and fill works to achieve the required site levels. Taking into account the previously developed nature of this LR the compatibility is considered to be fair during both construction and operation. As a result of the very limited extent of this LR impacted within the construction footprint and the medium ability to accept change, the magnitude of change is considered to be negligible.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR 13	Industrial / Open Storage											
13.1	Sheung Shui Industrial/Open Storage Area	DP 7: Utilization of Treated Sewage Effluent DP 11: Shek Wu Hui Sewage Treatment Works - Further Expansion (SWHSTW) DP13: New Sewage Pumping Stations	Study Area: 59.6ha DP Boundary: 11.95ha	Large	Fair	Good	Temporary Short	Permanent	Reversible	Reversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> DP 7 works within this LR relate to the western boundary of the proposed DP site which runs along the access road to Sheung Shui Slaughter House. Works would require clearance of scrub and some tree felling where access points are formed and construction of perimeter fencing. Given the industrial nature of the LR and limited extent of the works, the compatibility of the DP is also considered to be fair during construction, due to some vegetation loss and good during operation. DP11 will impact this resource through upgrading works within the existing STW site and extension works involving the construction of completely new STW facilities. Upgrading works will require decommissioning and demolition works of existing plant, this will all be based within the footprint of the existing site. The extension works will occupy a site currently used for open storage type uses; works will require clearance of low scrub vegetation, removal of existing temporary structures and breaking out of hard surfaces. Given the existing function of the site for sewage treatment facilities and disturbed nature of the receiving landscape, the compatibility of the DPs is considered to be fair in construction (due to size of construction area affected) and good in operation. DP13 SPS off Man Kam To Road will impact a very small area of this LR. Works will involve demolition of temporary structures and minor cut and fill works to form the required levels for the formation of the pumping station and surrounding boundary treatments. Given the already disturbed and highly changeable nature of the land use and the limited extent of the works, the compatibility of the DP is also considered to be fair during construction and good during operation. This area has already been significantly altered through the construction of the existing STW, large scale Sheung Shui Slaughter House facilities and ongoing open storage functions with the landscape appearing highly disturbed. It is therefore considered that the magnitude of change during construction would be small during to the highly changeable nature of the receiving landscape and negligible in operation given the good compatibility.										

Table 12C.6.2 Magnitude of Change on LCAs (DP 7, 11 and 13)

Note - For LCAs where no impact is recorded, these have been omitted.

LCA Code	Name	Site No. (Land Use Type*) Impacting LCA	Area of LCA affected within DP boundary (ha)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLCA-1	Natural Hillside Landscape	The LCA affected by the sites: DP7: KTN Flushing Water Service Reservoirs.	Study Boundary: 68.52ha DP Boundary: 1.22ha	Small	Good	Good	Permanent	Permanent	Irreversible	Irreversible	Small	Small
		Most of this LCA falls outside the DP boundary; the site designated for the KTN Flushing Water Service Reservoir (D4-1) sits completely within this LCA. Since this LCA already contains water reservoirs within hillside locations, this is considered compatible with the Project during operation, although it will be less compatible during the slope cutting / profiling and earthwork filling operations during construction. The construction works for both the reservoirs will require large alterations to these hillsides, during the construction stage this will involve major earthwork operations to achieve the level platforms in the hillside required to site the reservoir facilities which will involve the clearance of vegetation (mainly Shrubland) and removal of natural contours. In order to stabilise the uphill slopes, engineered retaining slopes will be constructed with faces of approximately 38m long. Since the majority of this LCA will remain unaffected by the Project the magnitude of change is considered to be small in both construction and operation.										
FLCA-1	Natural Hillside Landscape	The LCA affected by the sites: DP7: FLN Flushing Water Service Reservoirs.	Study Boundary: 84.53 DP Boundary: 1.63ha	Small	Good	Good	Permanent	Permanent	Irreversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> The construction works for both the reservoirs will require large alterations to these hillsides, during the construction stage this will involve major earthwork operations to achieve the level platforms in the hillside required to site the reservoir facilities which will involve the clearance of vegetation (mainly Shrubland) and removal of natural contours. In order to stabilise the uphill slopes, engineered retaining slopes will be constructed with faces of approximately 62m long. As this character area is natural and undeveloped hillside terrain, the development will constitute a significant change therefore the compatibility during construction and operation is considered to be poor. Whilst the construction footprint identified is relatively small, the works will involve creating level topography in a steeply sloped hillside area therefore the magnitude of change in both construction and operation is considered to be large.										
FLCA-2	Rural and Urban Peripheral Village Landscape	The LCA is affected by sites: DP 13: Sewage Pumping Stations	Study Area: 180.15ha DP Boundary: 0.46	Small	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Reversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> 3no. SPS are located within this LCA, the are SPS south of Fu Tei Au, SPS south of Wa Shan and SPS opposite Sacred Hill. Construction works will require vegetation clearance within the site, cut and fill works to achieve the required levels for construction of the pumping station building and boundary walls. As a result of the previously developed nature of these sites and small scale footprint of the DPs, the compatibility during construction and operation is considered to be fair. Taking into account the precedent for development in this LCA, and the previously developed nature of the sites, the magnitude of change during construction and operation is considered to be negligible.										

LCA Code	Name	Site No. (Land Use Type*) Impacting LCA	Area of LCA affected within DP boundary (ha)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLCA-4	Industrial Landscape	The LCA affected by the sites: D7: Utilization of Treated Sewage Effluent DP11: Proposed expansion and upgrading of Shek Wu Hui Sewage Treatment Works at FLN NDA DP13: SPS of Man Kam To Road	14.1	Medium	Fair	Good	Temporary Medium Term	Permanent	Reversible	Reversible	Small	Negligible
		<p><u>Description of Key Impacts during Construction and Operation</u></p> <p>The construction works for TSE at SWHSTW will involve vegetation clearance together with soil stripping and excavation works to form the foundations with TSE handling equipment. This area of ground has already been heavily altered through channelization and alignment modifications to Ng Tung River, therefore no valuable natural features will be lost or affected. In this case the compatibility of the scheme is considered to be fair both in construction and operation.</p> <p>DP11 will impact this LCA through upgrading works within the existing STW site and extension works involving the construction of completely new STW facilities. Upgrading works will require decommissioning and demolition works of existing plant, this will all be based within the footprint of the existing site. The extension works will occupy a site currently used for open storage type uses; works will require clearance of low scrub vegetation, removal of existing temporary structures and breaking out of hard surfaces. Given the existing function of the site for sewage treatment facilities and disturbed nature of the receiving landscape, the compatibility of the DPs is considered to be fair in construction (due to size of construction area affected) and good in operation.</p> <p>DP13 SPS off Man Kam To Road will impact a very small area of this LCA. Works will involve demolition of temporary structures and minor cut and fill works to form the required levels for the formation of the pumping station and surrounding boundary treatments. Given the already disturbed and highly changeable nature of the land use and the limited extent of the works, the compatibility of the DP is also considered to be fair during construction and good during operation.</p> <p>This area has already been significantly altered through the construction of the existing STW, large scale Sheung Shui Slaughter House facilities and on-going open storage functions with the landscape appearing highly disturbed. It is also an area that is highly changeable, in this case the compatibility is considered to be fair during construction and good in operation.</p> <p>As a result of the fair compatibility of the works during construction and taking into the large extent of the area, it is considered that the magnitude of change during construction would be small. Due to the good compatibility of the DPs, and highly changeable nature of the receiving landscape the magnitude of change during operation would be negligible.</p>										
FLCA-7	Major Water Course Corridor Landscape	The LCA affected by the sites: DP11: Proposed expansion and upgrading of Shek Wu Hui Sewage Treatment Works at FLN NDA DP 13: Sewage Pumping Stations	0.40	Small	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Negligible	Negligible
		<p><u>Description of Key Impacts during Construction and Operation</u></p> <p>The majority of the works forming these DPs will fall within the adjacent industrial landscape LCA. In this location both DPs have a frontage to Ng Tung River. The proposed DPs will be constructed at the top of the riverbank fronting the river channel. Vegetation clearance together with soil stripping and excavation works will be undertaken beyond the upper banks away from the river channels. The river banks has already been heavily altered through channelization and alignment modifications, therefore no valuable natural features will be lost or affected. In this case the compatibility of the scheme is considered to be fair both in construction and operation.</p> <p>Due to the relatively small scale of the area affected and taking into account this piece of landscape would be more associated with the adjacent industrial land due to its history of extensive engineered alterations to this LCA, the magnitude of change is considered to be negligible, during both construction and operation.</p>										

12C.19 Summary of key landscape impacts

A summary of the key landscape impacts identified in **Table 12C.6.1 and 12C.6.2** for each DP is provided below.

DP7: Utilization of Treated Sewage Effluent

The principal impacts as a result of the developments of TSE handling facilities and Flushing Water Service Reservoirs will occur during the construction and operation stages. The following LRs/LCAs are affected:

FLR 1.1 Ng Tung River (Fanling District)

FLR 6.4 Hillside Woodland at Lung Shan and Wa Mei Shan

FLR 8.4 Shrubland/Grassland Mosaic at Lung Shan

FLR 8.5 Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Range Foothills

FLR 12.7 Rural Development Area at Lung Shan and Kau Lung Hang Shan

FLR 13.1 Sheung Shui Industrial/ Open Storage Area

KLCA-1 Natural Hillside Landscape

FLCA-1 Natural Hillside Landscape

FLCA-4 Industrial Landscape

It is predicted that most impacts will be generated in relation to FLR 1.1, 8.4, 8.5, KLCA-1 and FLCA-1 relating to the construction of the Flushing Water Service Reservoirs where extensive cut and fill operations together with engineered slopes will be required, resulting in permanent loss of the associated LRs area set within the wider LCA. The works in association with the TSE handling facilities located adjacent to SWHSTW are considered to be compatible with the existing landscape setting and the level of impact would generally be low.

DP 11 – Shek Wu Hui Sewage Treatment Works - Further Expansion

The principal impacts as a result of the upgrading and extension works at SWHSTW will mainly occur during the construction stage. The following LRs/LCAs are affected:

FLR 1.1 Ng Tung River (Fanling District)

FLR 1.2 Shek Sheung River

FLR 13.1 Sheung Shui Industrial/Open Storage Area

FLCA 4 – Industrial Landscape

FLCA 7 – Major Water Course Corridor Landscape

It is predicted that most impacts in relation to this scheme would be generated in the construction stage, mainly due to the likely scale of the construction works within the LR and LCA areas. In all cases due to the deteriorated condition of the receiving landscape and its highly

changeable nature it is considered these impacts would be small. In all cases, during operation, the magnitude of change would be negligible due to the good compatibility of these works with the existing landscape setting.

DP13: New Sewage Pumping Stations

The principal impacts as a result of the construction of the 4no. new SPS in FLN NDA will mainly occur during the construction stage. The following LR/LCAs are affected:

FLR 1.1 - Ng Tung River (Fanling District)

FLR 1.2 – Shek Sheung River

FLR 7.2 – Lowland Woodland at Fu Tei Au and Sheung Shui Water Treatment Works

FLR 9.2 Fu Tei Au Agricultural Land

FLR 9.5 - Agricultural Land at Sheung Shui Wa Shan

FLR12.8 - Rural Development Area at Ma Shi Po

FLR 13.1 - Sheung Shui Industrial/Open Storage Area

FLCA 2- Rural and Urban Peripheral Village Landscape

FLCA 4- Industrial Landscape

FLCA-7 - Major Water Course Corridor Landscape

Whilst the footprint of all of these projects is very small, potential impacts are predicted in relation to FLR 7.2 and 9.2 due to poor compatibility with these LR/LCAs. In terms of other LR/LCAs, the impacts are considered to be small to negligible as the works are within areas that have been previously developed.

12C.20 Significance of Landscape Impacts

The potential significance of landscape impacts during the construction and operational phases, before mitigation, is provided in **Tables 12C.8.1** and **12C.8.2** below. The assessment follows the methodology proposed in **Section 12.18** and the matrix provided in **Table 12.18.1**.

Landscape impacts are mapped on **Figures 12.52.22 and 12.52.33 to 40**.

Table 12C.8.1 Significance of landscape impacts on LRs (DP 7, 11 and 13)

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of Impact (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
FLR 1	Channelized Water Course					
1.1	Ng Tung River (Fanling District)	Medium	Small	Negligible	Slight	Insignificant
1.2	Shek Sheung River	Medium	Small	Negligible	Slight	Insignificant
FLR 6	Hillside Woodland					
6.4	Hillside Woodland at Lung Shan and Wa Mei Shan	High	Small	Small	Moderate	Moderate
FLR 7	Lowland Woodland					
7.2	Lowland Woodland at Fu Tei Au and Sheung Shui Water Treatment Works	Medium	Small	Small	Slight	Slight
FLR 8	Shrubland/Grassland Mosaic					
8.4	Shrubland/ Grassland Mosaic at Lung Shan	Medium	Large	Large	Substantial	Substantial
8.5 (KLR-8.3)	Shrubland/ Grassland Mosaic in Tai Shek Mo and the Western Range Foothills	Medium	Large	Large	Substantial	Substantial

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of Impact (Large/ Intermediate/ Small/ Negligible		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
FLR 9	Agricultural Land					
9.2	Fu Tei Au Agricultural Land	Medium	Small	Small	Slight	Slight
9.5	Agricultural Land at Sheung Shui Wa Shan	Medium	Small	Small	Slight	Slight
FLR 12	Rural Development Area					
12.7	Rural Development Area at Wo Hop Shek and Lung Shan	Low	Negligible	Negligible	Insignificant	Insignificant
12.8	Rural Development Area around Ma Shi Po	Medium	Negligible	Negligible	Insignificant	Insignificant
FLR 13	Industrial / Open Storage					
13.1	Sheung Shui Industrial/ Open Storage Area	Low	Small	Negligible	Insignificant	Insignificant

In summary for LR, moderate adverse impact is predicted during the construction and operational stages for FLR 6.4 Hillside Woodland at Lung Shan and Wa Mei Shan. Substantial impacts are predicted for FLR- 8.4 Shrubland/Grassland Mosaic at Lung Shan and FLR - 8.5 Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Range Foothills due to the scale and nature of the impact arising from the construction of the Flushing Water Service Reservoirs under DP7. These works will involve topographical changes within natural landscape areas which will lead to direct loss of these LR.

Slight adverse impacts are predicted for FLR 7.2 Lowland Woodland at Fu Tei Au and Sheung Shui Water Treatment Works, this is due to loss of trees within an area of medium sensitivity. Slight adverse impacts are also predicted in relation to FLR 9.2 Fu Tei Au Agricultural Land and FLR 9.5 Agricultural Land at Sheung Shui Wa Shan due to the direct loss of this LR. In addition FLR 1.1 Ng Tung River (Fanling District), 1.2 Shek Sheung River will experience slight adverse impacts during construction due to the close interface with the works areas where excavation works will be required behind the river bank.

The remaining LRs will all experience insignificant impacts at the construction and operational stages.

Table 12C.8.2 Significance of Impacts on LCAs (DP7, 11 and 13)

LCA Code	Name	LCA Sensitivity (High/ Medium/ Low)	Magnitude of Impact (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
KLCA 1	Natural Hillside Landscape	High	Small	Small	Moderate	Moderate
FLCA 1	Natural Hillside Landscape	High	Small	Small	Moderate	Moderate
FLCA 2	Rural and Urban Peripheral Village Landscape	Medium	Negligible	Negligible	Insignificant	Insignificant
FLCA 4	Industrial Landscape	Low	Small	Negligible	Slight	Insignificant
FLCA 7	Major Water Course Landscape	Medium	Negligible	Negligible	Insignificant	Insignificant

In summary for LCAs, moderate impacts are predicted during the construction and operational stages for KLCA 1 and FLCA 1 – Hillside Landscape, located in KTN and FLN respectively. This impact would be generated as a result of the reservoir developments within this LCA of high sensitivity which would disrupt topography within this natural landscape setting.

The remaining LCAs will all experience a slight or insignificant impact at the construction and operational stages.

12C.21 Landscape and Visual Mitigation Measures for Construction and Operation

The proposed mitigation measures for the Project are summarized in **Table 12C.9.1** below and described in detail following. Mitigation measures not applicable to these DPs have been omitted from this list. The same table also lists the agents responsible for the capital funding, the implementation and the maintenance of the suggested measures. These agents will be agreed before the start of construction.

Table 12C.9.1–Summary of Proposed Mitigation Measures

Mitigation Measure Code	Summary Description	Capital Funding Agency ⁽¹⁾	Implementation Agency	Post-Construction Maintenance Agency ⁽²⁾
MM1	Minimum Topographical Change	Government/ Private Sector	Contractors of the Government/ Private Sector	n/a
MM2	Detailed Design - Visual	Government/ Private Sector	Contractors of the Government/ Private Sector	DSD/WSD
MM4	Tree Protection & Preservation	Government/ Private Sector	Contractors of the Government/ Private Sector	n/a
MM5	Tree Transplantation	Government/ Private Sector	Contractors of the Government/ Private Sector	DSD/WSD
MM6	Slope Landscaping	Government/ Private Sector	Contractors of the Government/ Private Sector	DSD/WSD
MM7	Compensatory Planting	Government/ Private Sector	Contractors of the Government/ Private Sector	DSD/WSD
MM8	Woodland Compensatory Planting	Government/ Private Sector	Contractors of the Government/ Private Sector	DSD/WSD
MM9	Vertical Greening	Government/ Private Sector	Contractors of the Government/ Private Sector	DSD/WSD

⁽¹⁾ CEDD/ other government departments will be responsible for funding except where sites are tendered out to private investors, when these investors will be responsible for the funding.

⁽²⁾ The Contractor will be responsible for landscaping during the agreed establishment and maintenance period. Other designated maintenance agents to take up maintenance of landscaping after end of agreed period.

Mitigation Measure Code	Summary Description	Capital Funding Agency ⁽¹⁾	Implementation Agency	Post-Construction Maintenance Agency ⁽²⁾
MM10	Green Roof	Government/ Private Sector	Contractors of the Government/ Private Sector	DSD/WSD
MM11	Screen Planting	Government/ Private Sector	Contractors of the Government/ Private Sector	DSD/WSD
MM14.3	Watercourse Impact Mitigation – Enhancement Planting on Embankment	Government/Private Section	Contractors of the Government/Private Sector	DSD/WSD
MM16	Screen Hoarding	Government/ Private Sector	Contractors of the Government/ Private Sector	DSD/WSD
MM17	Light Control	Government/ Private Sector	Contractors of the Government/ Private Sector	DSD/WSD

Minimum Topographical Change (MM1)

Some elements of the revised RODP, in this case the Flushing Water Service Reservoirs, are still undergoing basic design refinements therefore the design assumes a worst case scenario whereby comprehensive mitigation measures would be required. The detailed design of these facilities should adopt a robust approach to minimising land take to reduce the potential for construction of engineered slopes and disruption to natural terrain. With respect to the proposed top water levels and founding levels, a cut slope formation of about 39m and 62m high for KTN and FLN flushing water service reservoirs respectively is envisaged. Based on preliminary stability assessment, the proposed cut / fill slope angle would not exceed 40° to satisfy the requirement of minimum Factor of Safety of 1.4.

To minimise landscape and visual impacts, the footprint and elevation should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain and reduce overall earth movements. Where there is a need to significantly cut into the existing landform, retaining walls should also be considered as well as with profiled slopes, to minimise landform changes and land resumption.

Where engineered slopes are proposed, a terraced design is recommended that will allow planting of larger species planting within the

slope face to assist with mitigating visual impacts. Generally these should link with other planted areas to avoid a conspicuous green patch on an otherwise unplanted hillside.

In addition, earthworks and engineered slopes should be designed to provide a structurally stable and visually interesting landform, which is compatible with surrounding landscape and mimics the natural contouring and terrain (e.g. introduction and continuation of natural features such as spurs and ridges where appropriate) to support assimilation with the hillside setting and avoid the appearance of straight, geometric line within the natural setting.

Detailed Design (Visual) (MM2)

The overall design of the DP has considered reducing visual impacts.

The form, textures, finishes and colours of the proposed SPS buildings and boundary treatments should aim to be compatible with the existing surroundings. To improve visual amenity, designs should be aesthetically pleasing and treatment of structures also improve visual amenity. For example natural building materials such as stone and timber, should be considered for architectural features, and light earthy tone colours such as shades of green, shades of grey, shades of brown and off-white should also be considered to reduce the visibility of the development components, including all structures, buildings and fencing.

For DP11 and DP7, the operational requirements for sewage treatment plant layout and built is likely to restrict some of the options in terms of visual improvements. Visual improvement can be achieved through the use of natural earthtone colours such as shades of green, shades of grey, shades of brown and off-white. In addition to tree screening, structural screens or barriers using natural materials, such as timber, that enclose unsightly features of the development can assist in reducing visual impact.

In terms of the reservoir construction works, the main structure of these will be below ground however, above ground features such a small ancillary buildings should also follow the approach described above.

Tree Protection & Preservation (MM4)

Existing trees to be retained within the Project Site should be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage).

Tree Transplantation (MM5)

Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 and final locations of transplanted trees should be agreed prior to commencement of the work.

Slope Landscaping (MM6)

Hydroseeding of modified slopes should be done as soon as grading works are completed to prevent erosion and subsequent loss of landscape resources and character. Woodland tree seedlings and/ or shrubs should be planted where the slope gradient and site conditions allow. In relation to embankments formed above the reservoirs, planting terraces are incorporated into the design to allow for greening of any engineered slopes.

In addition, landscape planting should be provided for the retaining structures associated with modified slopes, where conditions allow. All slope landscaping works should comply with *GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes*.

Compensatory Planting (MM7)

Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under ETWBTC 3/2006. Compensatory planting is proposed at the open areas within development lots.

Compensatory planting for shrub cover should be considered in suitable locations including native species such as *Melastoma malabathricum*, *Diospyros vaccinioides*, *Gardenia jasminoides*, *Ixora chinensis*, *Ligustrum sinense*, *Litsea rotundifolia*, *Melastoma dodecandrum*, *Atalantia buxifolia*, *Rhodomyrtus tomentosa*, *Rhaphiolepis indica*, and *Rhododendron simsii*.

For specific woodland compensatory planting, see MM8.

For compensatory planting in relation to reservoir construction, also see MM10.

Woodland Compensatory Planting (MM8)

Specific Woodland compensatory planting is proposed for any areas of woodland that are unavoidably affected. The location and design of the woodland compensatory planting will principally be within habitats of

lower value such as upland grassland. These have been considered both within the NDAs.

The proposed locations are mostly on the foothills of Tai Shek Mo and on Fung Kong Shan in KTN NDA with a small area in the northern FLN NDA.

The total area allocated for compensatory woodland planting is more than 16 ha. This provision allows in part for the fact that it will take some time for the compensatory planting to achieve the landscape and ecological function and value of the area to be lost. In addition, it allows for the fact that not all of the areas identified for planting will prove to be plantable, by virtue of topography and ground conditions and, especially, because though the areas identified are largely grassland it is inevitable that these areas will already support some patches of trees and shrubs which would be inappropriate for further planting.

The intention of the compensatory woodland will be to recreate areas of quality woodland, not necessarily to compensate for loss of trees on a like for like basis. Native tree species are suggested for planting, including *Ailanthus fordii*, *Bischofia javanica*, *Castanopsis fissa*, *Celtis sinensis*, *Cinnamomum burmannii*, *Cinnamomum camphora*, *Xanthoxylum avicennae*, *Liquidambar formosana*, *Sapium discolor*, *Schefflera heptaphylla* and *Ilex rotunda*. In addition some understory vegetation may be planted including shrubs such as *Atalantia buxifolia*, *Diospyros vaccinioides*, *Gardenia jasminoides*, *Ixora chinensis*, *Ligustrum sinense*, *Litsea rotundifolia*, *Melastoma malabathricum*, *Melastoma dodecandrum*, *Rhodomyrtus tomentosa*, *Raphiolepis indica*, and *Rhododendron simsii*.

Vertical Greening (MM9)

Planting of climbers to grow up vertical surfaces were appropriate, such as along perimeter fencing and building walls are recommended to break up uniform surfaces and provide visual amenity.

Green Roof (MM10)

Roof greening has been proposed for all sewage pumping stations in order to improve visual integration within the proposed urban setting and reduce exposure to untreated concrete surfaces and particularly mitigate visual impact to VSRs at high levels.

Green roofing is also proposed within the reservoir schemes; in this case the reservoir enclosure which covers the storage tanks can be landscaped. This will assist in reducing the exposure to untreated man-made surfaces. In addition, shrubland/ grassland can be established over the reservoir, partly compensating for the loss of this resource during construction.

Screen Planting (MM11)

Tall screen/buffer trees and shrubs should be planted to screen proposed structures such as sewage treatment plants and buildings. This measure

may additionally form part of the compensatory planting and will improve compatibility with the surrounding environment and create a pleasant pedestrian environment.

Watercourse Impact Mitigation (MM14)

For channelized watercourses if these are modified, they should match the existing and include enhancement planting to upgrade the channels as appropriate, including consideration of wetland planting along embankments where appropriate.

Enhancement Planting on Embankment MM14.3

For channelised watercourses, if these are modified, the Drainage Services Department Practice Note No.1/2005 – Guidelines on Environmental Considerations for River Channel Design, should be considered and appropriate mitigation measures included ensuring the new watercourses match the existing as far as possible. Measures can include enhancement planting to upgrade the channels as appropriate, including consideration of wetland planting along embankments where appropriate; as well as consideration of the best materials for the channel lining (e.g. gabion). All measures must also ensure any necessary maintenance work can be carried out and that the channel meets all its requirements for water flow.

The proposed construction of sewage treatment facilities of DP7 and DP11 would interface with Ng Tung River and Shek Sheung River. All SPSs excluding SPS of Man Kam To Road would also interface with Ng Tung River. In all cases this would involve excavation works behind the river bank, including some breaking out of surfaces. As stated above, the replacement channel works should match the existing and where possible include enhancement planting.

Screen Hoarding (MM16)

Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders with public accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used.

Light Control (MM17)

Construction day and night time lighting should be controlled to minimise glare impact to adjacent VSRs during the construction stage. Street and night time lighting shall also be controlled to minimize glare impact to adjacent VSRs during the operation phase. This is considered a general measure for good practice.

The reservoir development will appear on undeveloped or artificially lit hillsides therefore external lighting provision should be heavily restricted.

Other good practise measures.

For areas unavoidably disturbed by the Project on a short term basis e.g. works areas, the general principle to try and restore these to their former state to suit future land use, should be adhered to.

With regard to topsoil, where identified, it should be stripped, treated appropriately, and where suitable and practical stored for re-use in the construction of the soft landscape works such as roadside amenity strips, and open space sites. It is assumed that the topmost 100mm of soil surface will be topsoil material. This good site practice and will also minimize off-site disposal.

For all planting, this should be installed as soon as the areas become available, to achieve early establishment.

12C.22 Significance of Residual Landscape Impacts upon mitigation

The proposed landscape and visual mitigation measures, as described in **Section 12C.9**, have been applied to the various impacts and used to identify potential residual impacts.

The potential significance of residual landscape impacts during the construction and operational phases, before and after mitigation at day 1 and year 10, are provided in **Tables 12C.10.1** and **12C.10.2**. The tables assume that the appropriate mitigation measures have been applied and that the full effect of the soft landscape mitigation measures would be fully realised and established after 10 years.

Where insignificant impacts have been identified prior to mitigation, mitigation measures are still shown in the table as these areas would be applied as best practice in the construction and operational stages as part of a consistent design and construction approach.

Landscape mitigation measures are presented on **Figures 12.52.52, 12.52.70 to 75, 12.52.87 to 88 and 12.52.91 to 94**.

Table 12C.10.1 Residual Landscape Impact on Implementation of Mitigation Measures for LRs

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
FLR 1	Channelized Water Course							
1.1	Ng Tung River (Fanling District)	Slight	Insignificant	4, 5, 6, 7, 14.3	4, 6	Slight	Insignificant	Insignificant
1.2	Shek Sheung River	Slight	Insignificant	4, 5, 6, 7, 14.3	4, 6	Slight	Insignificant	Insignificant
FLR 6	Hillside Woodland							
6.4	Hillside Woodland at Lung Shan and Wa Mei Shan	Moderate	Moderate	1, 4, 5, 8	4, 6	Sight	Slight	Insignificant
FLR 7	Lowland Woodland							
7.2	Lowland Woodland at Fu Tei Au and Sheung Shui Water Treatment Works	Slight	Slight	1, 4, 5, 7	4, 6	Sight	Slight	Insignificant
FLR 8	Shrubland/ Grassland Mosaic							
8.4	Shrubland/Grassland Mosaic at Lung Shan	Substantial	Substantial	1, 5, 6, 7, 9,10	4, 6	Moderate	Moderate	Slight
8.5	Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Range Foothills	Substantial	Substantial	1, 5, 6, 7, 9,10	4, 6	Moderate	Moderate	Slight

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
KLR 9	Agricultural Land							
9.2	Fu Tei Au Agricultural Land	Slight	Slight	1, 4, 5, 6, 7	4	Slight	Insignificant	Insignificant
9.5	Agricultural Land at Sheung Shui Wa Shan	Slight	Slight	1, 4, 5, 6, 7	4	Slight	Insignificant	Insignificant
FLR 12	Rural Development Area							
12.7	Rural Development Area at Wo Hop Shek and Lung Shan	Insignificant	Insignificant	1, 4, 5, 6, 7	4	Insignificant	Insignificant	Insignificant
12.8	Rural Development Area around Ma Shi Po	Insignificant	Insignificant	1, 4, 5, 6, 7	4	Insignificant	Insignificant	Insignificant
FLR 13	Industrial/Open Storage							
13.1	Sheung Shui Industrial/Open Storage Area	Insignificant	Insignificant	1, 4, 5, 6, 7	4	Insignificant	Insignificant	Insignificant

Table 12C.10.2 Residual Landscape Impact on Implementation of Mitigation Measures for LCAs

LCA Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
KLCA-1	Natural Hillside Landscape	Moderate	Moderate	1, 4, 5, 6, 7, 8, 10	4, 6, 7, 8	Moderate	Slight	Insignificant
FLCA-2	Rural and Urban Peripheral Village Landscape	Insignificant	Insignificant	1, 4, 5, 6, 7	4, 6, 7	Insignificant	Insignificant	Insignificant
FLCA-4	Industrial Landscape	Slight	Insignificant	1, 4, 5, 6, 7	4, 5, 6, 7	Insignificant	Insignificant	Insignificant
FLCA-7	Major Water Course Corridor Landscape	Insignificant	Insignificant	1, 4, 5, 6, 7, 14.3	1, 14.3	Insignificant	Insignificant	Insignificant

Only a very small area (approximately 400m²) of Hillside Woodland at Lung Shan and Wa Mei Shan (FLR-6.4) would be affected by the FLN Flushing Water Reservoir works. Moderate adverse impacts prior to mitigation are predicted, these would be generated by the high sensitivity of the resource and requirement for felling to reconfigure the existing road access. Measures to protect and preserve trees, as well as transplant and actively compensate them with woodland plantation, will reduce this impact. Since this LR is on hillside, measures to reinstate/ landscape any slopes that are affected will also help mitigate impacts. The impact level is considered to reduce to slight at construction and operation day 1, and become insignificant by year 10 when the compensatory woodland planting will have matured to its full potential.

Substantial adverse impacts during construction and operation prior to mitigation are predicted in relation to FLR-8.4 Shrubland/Grassland Mosaic at Lung Shan and FLR-8.5 Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Ranges Foothills. This is as a result of construction works for the KTN and FLN Flushing Water Reservoirs despite the relatively small construction footprint. Considerable site formation works would be required comprising cut/ fill slopes of up to 62m and 38m respectively at a maximum 40 degree gradient. Detailed engineering design of the reservoirs is not finalised however, measures to minimise changes to natural terrain, reduce land take and reduce overall earth movements should be integrated within the works. Retaining walls should also be considered as well as cut slopes where this would allow reduced landform changes. Engineered slopes should integrate tree/shrub planting across the face to help screen and visually integrate these features with the surrounding landscape. The engineered landform should be carefully detailed so that these slopes can tie into existing natural contours beyond the works area. Landscaping of the reservoir roofs will also help to mitigate the impact to the shrubland/ grassland (no trees will be planted on the roof itself) by creating a green vegetated area rather than hardscape surface. Planting of climbers to grow up vertical surfaces where appropriate would also soften any wall structures and break up uniform surfaces. By implementing all these measures as well as taking care to landscape any slopes that are formed and implement protection, preservation, transplantation and compensatory planting for trees, the impact is considered to reduce to moderate at operation day 1. With soft landscaping maturing and conferring greater mitigation by year 10 of operation, the impact is considered to be slight.

It is considered that all the remaining impacts to LRs could be mitigated to slight or insignificant at the construction stage through mitigation works.

In terms of residual impact on LCAs, moderate adverse impacts, prior to mitigation, are predicted during the construction and operational stages for KCLA1 and FLCA 1 – Hillside Landscape within KTN and FLN,

generated as a result of the reservoir developments within the natural landscape of these high sensitivity LCAs. The proposed mitigation measures, including minimisation of topographical change, compensatory planting within the DP boundary and slope landscaping of the new cut slopes, will assist in reducing the initial scale of the impact. The site does allow potential to plant areas within the site, such as on the proposed cut slopes above the reservoir and greening measure such as green roofing type treatments to the reservoir cover so that planting can be re-established insitu. In this case it is considered that post mitigation; moderate adverse impacts would remain during construction reducing to insignificant after 10 years of operation. This follows establishment of landscape planting measures including compensatory planting, tree protection and preservation on the fringes of the DPs, tree transplantation and green roofing.

The remaining LCAs will all experience slight or insignificant impact at the construction and operational stages. This is as a result of the construction works being largely within industrial areas where the impacts to the resource would be limited due to the existing poor condition and low sensitivity. This principally relates to DP7 and 11 works at SWHSTW.

12C.22.1 Conclusion

As a result of mitigation measures it is considered that adverse impacts can be reduced to slight or insignificant levels at the operation stage for the majority of LRs and LCAs in relation to all DP Package C projects.

Substantial adverse impacts are predicted to be generated in relation to the reservoirs within DP7 during the construction stage due to loss of topography in order to construct the reservoir plateau and subsequent loss of Shrubland/ Grassland Mosaic landscape resource (LR8.4 and 8.5) . The scale of slope cutting can possibly be reduced during the detailed design stage therefore reducing impact on the LRs. The proposed mitigation measures, including minimisation of topographical change, compensatory planting within the DP boundary and slope landscaping of the new cut slopes, will assist in in reducing the initial scale of the impact. The site does allow potential to plant areas within the site, such as on the proposed cut slopes above the reservoir and greening measure such as green roofing type treatments to the reservoir cover so that planting can be re-established insitu.

Works in relation to DP7 Utilisation of TSE at SWHSTW and DP11 SWHSTW further expansion would have limited impact on the receiving landscapes and are considered acceptable.

In relation to the SPSs in FLN NDA which are DP 13, these will have minimal impact on the affected resources and it is considered that compensatory planting measures implemented as soon as possible will mitigate the impacts on affected LRs to insignificant level by the operation stage.

On review of the likely residual impacts and possibility to reduce all to slight or insignificant levels by operational year 10, it is considered that DPs 7, 11 and 13 would be acceptable in terms of landscape impacts.

12C.23 Visual Impact Assessment

Visual impacts have been assessed for the construction and operational phases of the Schedule 2 DPs areas; the methodology is set out in **Section 12.19**.

12C.24 Visual Baseline Conditions

The area covered by FLN NDA, of which the Schedule 2 DP form part is around 164 ha and is bound by Fu Tei Au Road to the north, the hill range of Cheung Po Tau, Cham Shan, Wa Shan and Ma Tau Leng to the north-east, Ma Wat River to the east, Sha Tau Kok Road and Ma Sik Road to the south, and Tin Ping Road, Jockey Club Road and Po Wan Road to the south-west with a very small section of the MTRC East Rail line binding it to the west.

Ng Tung River flows along the base of the foothills of the defining hill ranges and is a key characteristic of the FLN NDA area. The area is generally of medium landscape value with high value upland areas of Cham Shan and Wa Shan defining one side of the river valley as a green backdrop into which San Wai/Tai Ling Firing Range integrates well. The urban areas of Fanling/ Sheung Shui, with a number of high rise structures and new developments as well as industries such as vehicle repair and material storage, define the other side of the river and the low-lying river flood plains in between are predominantly of a rural nature, with small scale agricultural plots (both active and abandoned) and some scattered residential settlements and isolated buildings and some open storage, which contrasts with the more natural character of the area. Sheung Shui Slaughter House and Shek Wu Hui Sewage Treatment Works are also located in the western area of this NDA, and Sheung Shui Water Treatment Works is located immediately to the north. At the north of Fanling/ Sheung Shui New Town, a number of more traditional villages are concentrated, including Sheung Shui Heung, Sheung Shui Wa Shan, Siu Hang Tsuen, Siu Hang San Tsuen and Kan Lung Tsuen/ San Wai also lie to the north of the river and are set against the hillside backdrop.

DP7 - Utilization of TSE at SHWSTW

The TSE from the upgraded SWHSTW will be reused for non-potable uses such as toilet flushing, landscape irrigation and make-up water for district cooling system (DCS). This is located adjacent to the existing SWHSTW plant and the Sheung Shui Slaughter House within an industrial landscape setting. Due to the scale of the existing buildings and relatively open level landscape, these structures are dominant features of the local landscape. Visually the areas appears degraded due to large scale engineering features associated with the existing built

developed combined with the wide channelised rivers system which forks around the whole development.

Kwu Tung North Flushing Water Service Reservoir

The proposed reservoir site sits on the hillside of Tai Shek Mo to the east of Lo Wu Rifle Range. This is a highly exposed area due to lack of surrounding woodland cover on the hillside slopes. Tai Shek Mo is a key landscape feature within the local landscape which can be seen from many points throughout the area. From more elevated point, Tai Shek Mo is seen with the backdrop of Shenzhen which creates a strong visual contrast between this natural terrain feature and dense urban structure of the city.

Fanling North Flushing Water Service Reservoir

This reservoir sits to the south of Fanling, to the east of the MTR East Rail line adjacent to the existing Tong Hang Reservoir. Locally the landscape is more wooded and urban / village development encroaches around the base of the hillside proposed for the new reservoir. The Fanling Highway and MTR East Rail line are major visual detractors within the landscape setting. The reservoir site is generally viewed with the Lung Shan hillside in the background which is much more elevated. Engineered slopes, associated with the Tong Hang Reservoir access road are also quite visible. At present, there is a clear contrast between the developed floor of the valley and the natural landscape provided by the extensive areas of hillside in the vicinity.

DP11 Shek Wu Hui Sewage Treatment Works - Further Expansion (SWHSTW)

The existing SWHSTW is a secondary STW with design capacity of 93,000m³/day, serving the North District sewerage catchment (Sheung Shui and Fanling areas). In order to cope with the natural and planned population growths within the sewerage catchment, SWHSTW is proposed to be further expanded by phases within the existing and adjacent extension sites, reaching an ultimate capacity of 190,000m³/day.

The existing STW appears as a large mass of storage tanks and connecting pipework at broadly similar heights across the site. It is located adjacent to the Sheung Shui Slaughter House within an industrial landscape setting. Due to the scale of the existing buildings and relatively open level landscape, these structures are dominant features of the local landscape. Visually the areas appears degraded due to large scale engineering features associated with the existing built developed combined with the wide channelised rivers system which forks around the whole development.

DP 13 - New SPS in FLN NDA

There will be four new SPSs in FLN NDA linking to the SWHSTW. These are SPS south of Fu Tei Au, SPS off Man Kam To Road, SPS south of

Wa Shan and SPS opposite Sacred Hill. Apart from the SPS off Man Kam To Road, these are located adjacent to Ng Tung River which is a dominant visual component in the local landscape due to its engineered form and alignment.

The site for the SPS south of Fu Tei Au sits with an agricultural area which is well wooded, generally views are restricted to the south towards the open river corridor. Locally the landscape is level although the terrain begins to rise further to the north.

The SPS off Man Kam To Road site location is within an open storage area which, visually, is highly changeable as temporary structures vary across the landscape and stacked containers form visual barriers across the landscape. The area appears degraded with some respite provided by natural elements in the form of semi-mature and mature tree planting. View northward to the hillside of Table Hill is also possible.

The site for the SPS south of Wa Shan is immediately adjacent to Ng Tung River within an area of agricultural and back by woodland. The appearance of this area is generally natural, enhanced by the hillside backdrop. The main visual detractor in the vicinity is the engineered appearance of the Ng Tung River.

The final SPS is located opposite Sacred Hill on a previously developed site adjacent to Ng Tung River. Locally, the landscape contains plantation woodland, smaller channelised watercourse and urban development (roads and residential buildings). Hillside and associated woodland provide a natural backdrop to the site when viewed from the south.

12C.24.1 Visual envelope

The visual envelope for the DPs is broadly similar to the FLN NDA however; it has been extended further to the west and south to accommodate works associated with the two Flushing Water Service Reservoirs (DP7). Broadly the viewshed is confined to the north and east by the ridgeline formed by the summits of Cheung Po Tau, Cham Shan, Wa Shan and reaching across to the more distant and easterly Tsung Shan and Mau Tau Leng summits. To the south east the foothills of Lung Shan contain the visual envelope while to the southern and western side the visual envelope is contained by the high-rise development of Fanling / Sheung Shui with the mountain range of Tai Shek Mo in the background.

Table 12C.12.1 below details the VPs in relation to the DPs and describes their overall sensitivity. This information is also presented on the following figures:

Figures 12.53.1 and 2 present VP locations.

Figures 12.54.1 to 26 provide representative photographic records from locations within each VSR, looking towards the relevant NDA and DPs. Since special access could not be gained for all VSRs, especially for private residential developments, the representative viewing locations may have been adjusted if necessary. The selected viewing point is considered the best alternative that represents the typical view of the VSRs.

Figures 12.55.8a to 12.55.20b provide representative photomontages showing the predicted view from selected viewpoints depicting existing conditions, Day 1 of Operation Phase without Mitigation Measures, Day 1 of Operation Phase with Mitigation Measures and Year 10 of Operation Phase with Mitigation Measures.

Table 12C.12.1 – VSRs and their sensitivity (DP7, 11 and 13)

VP CODE	Name	Category of VSR (Strategic/ District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed DP											
KVP10 (K5b)	Southern Knoll of Fung Kong Shan	District	Recreational (& some Residential & Occupational)	Approx. 100m when looking towards both east and south	Few	Good	Yes	Full	Medium	Frequent	Medium
Fung Kong Shan ridgeline runs in an inverted C shape from north to south and the ridgeline is not easily accessible with no clear path and much vegetation. The view north is partially blocked by the northern ridge, some Shenzhen high rise buildings are still visible in the background. The existing electricity pylons nearby and open industrial area at the northern base are both visually detracting elements to the view which in general is green from the shrubby grassland of the hills. View looks towards the proposed location for the Kwu Tung North Flushing Water Service Reservoir.											

Remarks: The *approximate closest viewing distance to the proposed schedule 2 DP* is measured from the edge of the VSR group to the closest built form proposed within the DP.

VP Code	Name	Category of VSR (Strategic/ District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
Description of Existing View, particularly toward the Proposed NDA											
FVP4	Corner of San Wan Road and San Po Street	Local	Pedestrian, travelling	15	Many	Poor	Yes	Partial	Short	Frequent	Low
View from end of service road leading to the south of Shek Wu Hui Sewage Treatment works.											

VP Code	Name	Category of VSR (Strategic/ District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
	Description of Existing View, particularly toward the Proposed NDA										
	Glimpse views of the existing sewage treatment plant above ancillary buildings and sheds are possible. The boundary wall of the STW and security fencing of the MTR East Rail line channel views along the service road. Views toward the peaks and ridgelines of Tai Shek Mo form the backdrop of the view.										
FVP5	Chuk Wan Street adjacent Shek Wu Hui Sewage Treatment Works.	Local	Pedestrian, travelling	50	Many	Poor	Yes	Partial	Short	Frequent	Low
	VP represents a typical view from pedestrian / vehicular bridge crossing Ng Tung River adjacent to the existing Shek Wu Hui Sewage Treatment Works. Generally the view from the area is enclosed until reaching this point whereby longer distance views are made possible along the open corridor of the channelized river. The engineered embankment and formalized channels are a visual detractor in the views; this together with the STW facilities and other industrial type buildings and uses forms a relatively poor quality environment. The elevated and undulating terrain forming the background to the views provide some positive visual amenity.										
FVP6a	Highpoint above Fu Tei Au Tsuen, facing south	District	Recreational	400	Few	Good	Yes	Full	Short	Occasional	Medium
	VP represents typical view from hillside above Fu Tei Au Tsuen looking towards the Shek Wu Hui Sewage Treatment Works and the western edge of the Sheung Shui urban area. The STW and adjacent slaughter house buildings are very large scale and detract from the quality of the view. Area of agricultural land (including some ponds) evokes a rural character although this is highly fragmented as a result of areas of built form and the engineered channels of Ng Tung river. The mountainous terrain of Kai Kung Leng within Lam Tsuen Country Park creates a dramatic backdrop to the view.										

VP Code	Name	Category of VSR (Strategic/ District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
	Description of Existing View, particularly toward the Proposed NDA										
FVP7	Jockey Club Road, adjacent Ha Pak Tsuen	Local	Pedestrian, travelling	90	Many	Poor	Yes	Partial	Short	Frequent	Low
	VP represents typical view along Jockey Club road adjacent to Ha Pak Tsuen. Residential developments are set back behind dense screens formed by mature vegetation. Vegetation cover beyond residential boundaries becomes sparser and less mature. Open storage land use on the other side of the road detracts significantly from the quality of the view. Glimpse views towards the high ground of Cheung Po Tau provide some visual amenity.										
FVP8	Access road adjacent Ng Tung River, west of Wa Shan Tsuen	Local	Recreational	50	Many	Fair	Yes	Partial	Short	Occasional	Medium
	VP represents typical view on access path running parallel to Ng Tung River to the west of Wa Shan Tsuen. The river corridor allows open uninterrupted views through the local area. Mature tree cover along the boundary of the path (on both sides of the river) screens the appearance of the smaller scale village type developments and surrounding agricultural land, only the high rise built form within the Sheung Shui / Fanling urban areas is visible.										
FVP9	Access track, Sheung Shui Wa Shan	Local	Residential, Occupational	125	Few	Fair	Yes	Glimpse	Long	Frequent	Medium

VP Code	Name	Category of VSR (Strategic/District/Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
	Description of Existing View, particularly toward the Proposed NDA										
	<p>Typical view experienced from within the Sheung Shui Wa Shan area.</p> <p>The gently sloping terrain and intervening mature vegetation cover forms a comprehensive screen between the village area and Ng Tung River and subsequent urban area of Sheung Shui making outward views difficult.</p> <p>Glimpsed views of mountains and ridgelines within Lam Tsuen Country Park can be seen above the tree line.</p> <p>Land uses within this area are varied; parking, hard standing and smaller commercial units detract from the overall visual quality.</p>										
FVP11	Sitting out area adjacent road bridge over Ng Tung River	Local	Recreational, travelling	110	Many	Fair	Yes	Partial	Short	Frequent	Medium
	<p>This VP represents the typical view experienced from the small sitting out area/shelter which overlooks Ng Tung River, facing back towards Sheung Shui, from the river path. The various low scale village and agricultural development throughout the northern area of Sheung Shui are well concealed with mature vegetation of the middle ground whereas the high-rise built form of the urban area dominates the view. The rigid geometry of engineered river channels detracts from the quality of the view.</p>										
FVP12	Lung Sum Avenue adjacent Woodland Crest	Local	Pedestrian, residential and travelling.	80	Many	Fair	Yes	Partial	Long	Frequent	High
	<p>This VP demonstrates the view along Lum Sum Avenue facing northeast, in front of the Woodland Crest Estate. The road, car parking and fenced off concrete drainage channel form the majority of the view. Vegetation cover is sparse and appears unmaintained.</p> <p>Long distance views to mountains on the horizon provide valuable visual amenity.</p>										

VP Code	Name	Category of VSR (Strategic/ District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
	Description of Existing View, particularly toward the Proposed NDA										
FVP25	Residential Block, Wah Sum Estate	District	Residential	515	Very Many	Good	Yes	Full	Long	Very Frequent	High
	This VP demonstrates the typical view from residential towers located at the Wah Sum Estate and its immediate vicinity. The elevation allows for an unobstructed view through the valley to the south east of Fanling and along the infrastructure corridor formed by the MTR East Rail Line and Fanling Highway. The mountainsides of Lung Shan and Kau Lung Hang Shan dominate the view. Villages and isolated developments occupy a large percentage of the valley floor.										

Remarks: The approximate closest viewing distance to the proposed DP is measured from the edge of the VSR group to the closest building proposed within the DP.

12C.25 Visual Impact Assessment

The potential sources of visual impact due to the Project are described in **Section 12C.4 and 5**. They will create varying levels of visual impact during the construction and operation phases in relation to each DP, due to factors such as obstruction of views, degradation of the visual quality of existing views and visual incompatibility with the surrounding visual context. The visual impact assessment considers each DP individually.

12C.25.1 Magnitude of Visual Change

The magnitude of visual change is largely dependent on a number of factors as outlined in the methodology. In general, the magnitude of change will reduce the further a VSR is from the Project.

Detailed engineering design of built elements in the NDA is ongoing at this stage therefore, the structures shown in the photomontages may change as detailed design is refined.

Table 12C.13.1 details the magnitude of change in relation to **DPs 7, 11 and 13**.

Table 12C.13.1- Magnitude of visual change for visual sensitive receivers (VSRs) due to Schedule 2 DPs (7, 11 and 13)

.VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	KVP10 (K5b north)	Southern Knoll of Fung Kong Shan	District	DP7 (Kwu Tung North Flushing Water Service Reservoir)	Partial	Approx.100m when looking towards both east and south	Medium	Poor	Poor	Temporary [Short]	Permanent	Irreversible	Irreversible	Intermediate	Intermediate
VP would experience views towards the construction works associated with the KTN Flushing Water Service Reservoir. This would involve major earthwork operations to form the level platform for the reservoir area and permanent removal of the natural hillside, replacing it with slopes and level area of a highly engineered and un-natural appearance. Due to the scale of operations the construction works are likely to be highly visible together with the construction movements to handle the large amounts of cut material taken from the hillside. Given the removal of natural landscape and replacement with engineered forms in this view, the compatibility of the works are considered to be poor in construction and operation. As a result of the scale of change that will occur in the view and openness of the local landscape towards this point, the magnitude of change in construction and operation is considered to be intermediate. Overall the magnitude of change is predicted to be intermediate during construction and operation.															
	FVP4	Corner of San Wan Road and San Po Street	Local	DP11	Partial	15	Large	Fair	Good	Temporary [short]	Permanent	Reversible	Reversible	Intermediate	Small
VP would experience views toward the south of the proposed SWHSTW upgrading works. Decommission and demolition works would be visible within the existing site footprint together with reconstruction and reconfiguration of the plant. Given the established development of the STW in this view there will not be a large change in the type of view experienced in the future, there compatibility of the project is considered to be fair during construction and good in operation. As a result of the works, in this view, being contained within the existing footprint of the STW, the main change in this landscape would be the demolition and reconfiguration (including resizing) of existing facilities. In this case it is considered that the magnitude of change during construction would be intermediate, reducing to small in operation would be small.															
	FVP5	Chuk Wan Street adjacent Shek Wu Hui Sewage Treatment Works	Local	DP7 and DP11	Partial	50	Medium	Fair	Good	Temporary [Short]	Permanent	Reversible	Irreversible	Intermediate	Intermediate

.VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
		<p>VP would mainly experience views towards the Proposed Expansion and Upgrading of Shek Wu Hui Sewage Treatment Works, although glimpse views through the site towards DP7 (TSE at SWHSTW) may be possible during construction and operation.</p> <p>Views towards the construction works to form the extension to the STW works involving vegetation clearance and excavation works. Operational views would include new above ground storage tanks and ancillary buildings. The scale of the development is relatively large as the works cover the whole site and will occupy a site which has been used for open storage purposed without permanent structures.</p> <p>Taking into account the existing visual setting of the STW and Slaughter House together with the generally degraded and highly engineered landscape, the compatibility of the DPs are considered to be fair during construction and good in operation.</p> <p>As a result of the increased footprint of the proposed works, the presence of the STW will increase within the immediate landscape setting causing additional visual intrusion. As this development is linked to the existing facility there is some visual association which would assist in lessening the overall perception of change. As a result the overall magnitude of change during construction and operation would be intermediate.</p>													
Y	FVP6a	Highpoint above Fu Tei Au Tsuen, facing south	District	DP7 and DP11	Partial	400	Large	Fair	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Large	Large
		<p>VP would experience view over the proposed SWHSTW upgrading and Extension works together with the adjacent Utilisation of TSE site adjacent.</p> <p>As a result of the elevation, the full extent of the DP areas can be seen; this would be worsened by any vegetation clearance within the site which could open up the view further. A clear view of the construction works would be possible together with the upgrading works to the existing STW. Taking into account that the site would be viewed within the context of an industrial and highly disturbed landscape the compatibility during construction and operation is considered to be fair.</p> <p>Due to the combined scale of the construction site, associated clearance works, opening up of view, extent of visibility and the likely visually intrusive operations of the construction works the magnitude of change during construction is considered to be large. As this development is linked to the existing facility there is some visual association which would assist in lessening the overall perception of change however, the development works comprise very large structures. As a result the overall magnitude of change during construction and operation would be large.</p>													
	FVP7	Jockey Club Road, adjacent Ha Pak Tsuen	Local	DP13	Partial	90	Small	Good	Good	Temporary [Short]	Permanent	Reversible	Irreversible	Negligible	Negligible
		<p>Views from this VSR will experience some change as a result of the SPS off Man Kam To Road where demolition and construction activity to form the building and boundary walling would be partially visible. The site is presently used for open storage and has already been heavily altered. Existing tree cover spread throughout the open storage provides some intervening cover.</p> <p>As a result of existing highly changeable open storage landscape together with the degraded nature of the view, the compatibility during construction and operation is considered to the good.</p> <p>Due to small scale nature of the DP in the view combined with a good compatibility with the receiving landscape, the magnitude of change during construction and operation is considered to be negligible.</p>													

.VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
	FVP8	Access road adjacent Ng Tung River, west of Wa Shan Tsuen	Local	DP13	Partial	50	Small	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Small	Small
		<p>VP would experience views of the construction and operation of the SPS south of Wa Shan which fronts onto the river channel in the middle ground of the view.</p> <p>Tree clearance within the construction footprint would open up partial views of the construction works. The site would also be seen in the context of the Fanling Bypass Western Section which would be a far larger component of the view.</p> <p>Due to existing mature tree cover and the relatively undeveloped appearance of the immediate view, it is considered that the SPS would have a poor compatibility with the receiving landscape. In operation it would be seen in conjunction with the Fanling Bypass and other landscaping works therefore the compatibility would be fair.</p> <p>As a result of the small scale footprint of the site, the magnitude of change in construction and operation is considered to be small.</p>													
	FVP11	Sitting out area adjacent road bridge over Ng Tung River	Local	DP13	Partial	110	Small	Fair	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Negligible
		<p>VP will experience views of the construction and operation of the SPS opposite Sacred Hill which is located directly across the river. Vegetation clearance works within the site would open up the works and views to construction operations to form the pumping station building and surrounding boundary wall. In the future the SPS would be seen in the context of the FLN NDA development.</p> <p>Taking into account the existing urban backdrop and previous leveling and development works in the proposed site, the compatibility of the DP during construction and operation is considered to be fair.</p> <p>As result of the fair compatibility and small scale nature of the development in the view and the future backdrop/integration with the FLN NDA, the overall magnitude of change is considered to be small in construction and negligible in operation.</p> <p>The magnitude of change, therefore, is considered to be small during construction and negligible in operation.</p>													

.VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
	FVP12	Lung Sum Avenue adjacent Woodland Crest	Local	DP13	Partial	110	Small	Fair	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Small	Negligible
		VP will experience views of the construction and operation of the SPS opposite Sacred Hill which is located to the right hand side of the view at end of the concrete channel which leads to Ng Tung River. Vegetation clearance works within the site would open up the works and views to construction operations to form the pumping station building and surrounding boundary wall. In the future the SPS would be seen in the context of the FLN NDA development.													
		Taking into account the future urban backdrop and previous leveling and development works in the proposed site, the compatibility of the DP during construction and operation is considered to be fair.													
		As result of the fair compatibility and small scale nature of the development in the view and the future integration with the FLN NDA, the overall magnitude of change is considered to be small in construction and negligible in operation.													
		The magnitude of change, therefore, is considered to be small during construction and negligible in operation.													
Y	FVP25	Residential Block, Wah Sum Estate	District	DP7 (Fanling North Flushing Water Service Reservoir)	Partial	515	Medium	Poor	Poor	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		VP would experience views towards the construction works associated with the FLN Flushing Water Service Reservoir. This would involve major earthwork operations to form the level platform for the reservoir area and permanent removal of the natural hillside, replacing it with slopes and level area of a highly engineered and un-natural appearance. Due to the scale of operations the construction works are likely to be highly visible together with the construction movements to handle the large amounts of cut material taken from the hillside.													
		Given the removal of natural landscape and replacement with engineered forms in this view, the compatibility of the works are considered to be poor in construction and operation.													
		As a result of the medium scale of change that will occur in the view and openness of the local landscape towards this point, the magnitude of change in construction and operation is considered to be intermediate.													
		Overall the magnitude of change is predicted to be intermediate during construction and operation.													

12C.26 Significance of Visual Impacts

Based on the sensitivity assessment of VSRs as described in **Section 12C.12** and the magnitude of change they might experience described in **Section 12C.13** the potential significance of the unmitigated visual impacts from DPs during the construction and operation are provided in **Table 12C.14.1** using the matrix given in the methodology, and taking into account site visits to the area.

Residual impact significance is also determined in this section, considering the mitigation measures described in full in **Section 12C.9**.

Photomontages demonstrating the potential visual impact of the proposed project before and after mitigation from certain VPs are illustrated on **Figure 12.55.8a to 20b**.

Table 12C14.1 - Significance of visual impacts for DP 7, 11 and 13

VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	VSR Type	VSR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
KVP10 (K5b north)	Southern Knoll of Fung Kong Shan	District	Recreational (& some Residential & Occupational)	Medium	Intermediate	Intermediate	Moderate/ Substantial	Moderate/ Substantial	1, 2, 4, 6, 11, 16	2, 9, 11, 12, 17	Moderate/ substantial	Moderate	Slight

VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	VSR Type	VSR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
FVP 4	Corner of San Wan Road and San Po Street	Local	Pedestrian, travelling	Low	Intermediate	Small	Moderate	Slight	2, 4, 11, 16, 17	2, 4, 11, 16, 17	Slight	Slight	Insignificant
FVP5	Chuk Wan Street adjacent Shek Wu Hui Sewage Treatment Works.	Local	Pedestrian, travelling	Low	Intermediate	Intermediate	Slight	Slight	2, 4, 11, 16, 17	2, 9, 10, 11, 17	Slight	Slight	Insignificant
FVP6a	Highpoint above Fu Tei Au Tsuen, facing south	District	Recreational	Medium	Large	Large	Moderate	Moderate	2, 4, 9, 11, 16, 17	2, 9, 10 11, 12, M17	Moderate	Moderate	Slight
FVP7	Jockey Club Road, adjacent Ha Pak Tsuen.	Local	Pedestrian, travelling	Low	Negligible	Negligible	Insignificant	Insignificant	2, 4, 11, 16, 17	2, 9, 11, 12, 14, 17	Insignificant	Insignificant	Insignificant
FVP8	Access road adjacent Ng Tung River, west of Wa Shan	Local	Recreational	Medium	Small	Small	Slight/ Moderate	Slight	2, 4, 11, 16, 17	2, 9, 11, 17	Slight	Insignificant	Insignificant
FVP11	Sitting out area adjacent road bridge over Ng Tung River.	Local	Recreational, travelling	Medium	Small	Negligible	Slight/ Moderate	Insignificant	2, 4, 11, 16, 17	2, 9, 11, 12, 14, 17	Slight	Insignificant	Insignificant
FVP12	Lung Sum Avenue adjacent Woodland Crest Estate.	Local	Pedestrian, residential and travelling	High	Small	Negligible	Moderate	Insignificant	2, 4, 6, 11, 16, 17	2, 9, 10, 11, 12, 17	Slight	Insignificant	Insignificant

VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	VSR Type	VSR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
FVP25	Residential Block, Wah Sum Estate	District	Residential	High	Intermediate	Intermediate	Moderate/ Substantial	Moderate/ Substantial	1, 2, 4, 11, 16, 17	2, 9, 11, 12, 17	Moderate/ Substantial	Moderate	Slight

12C.27 Conclusion

12C.27.1 Landscape Character Areas

In terms of residual impact on LCAs, moderate adverse impacts, prior to mitigation, are predicted during the construction and operational stages for KCLA1 and FLCA 1 – Hillside Landscape within KTN and FLN, generated as a result of the reservoir developments within the natural landscape of these high sensitivity LCAs. The proposed mitigation measures, including minimisation of topographical change, compensatory planting within the DP boundary and slope landscaping of the new cut slopes, will assist in reducing the initial scale of the impact. The site does allow potential to plant areas within the site, such as on the proposed cut slopes above the reservoir and greening measure such as green roofing type treatments to the reservoir cover so that planting can be re-established insitu. In this case it is considered that post mitigation; moderate adverse impacts would remain during construction reducing to insignificant after 10 years of operation. This follows establishment of landscape planting measures including compensatory planting, tree protection and preservation on the fringes of the DPs, tree transplantation and green roofing.

The remaining LCAs will all experience slight or insignificant impact at the construction and operational stages. This is as a result of the construction works being largely within industrial areas where the impacts to the resource would be limited due to the existing poor condition and low sensitivity. This principally relates to DP7 and 11 works at SWHSTW.

12C.27.2 Landscape Resources

Only a very small area (approximately 400m²) of Hillside Woodland at Lung Shan and Wa Mei Shan (FLR-6.4) would be affected by the FLN Flushing Water Reservoir works. Moderate adverse impacts prior to mitigation are predicted, these would be generated by the high sensitivity of the resource and requirement for felling to reconfigure the existing road access. Measures to protect and preserve trees, as well as transplant and actively compensate them with woodland plantation, will reduce this impact. Since this LR is on hillside, measures to reinstate/ landscape any slopes that are affected will also help mitigate impacts. The impact level is considered to reduce to slight at construction and operation day 1, and become insignificant by year 10 when the compensatory woodland planting will have matured to its full potential.

Substantial adverse impacts during construction and operation prior to mitigation are predicted in relation to FLR-8.4 Shrubland/Grassland Mosaic at Lung Shan and FLR-8.5 Shrubland/Grassland Mosaic in Tai Shek Mo and the Western Ranges Foothills. This is as a result of construction works for the KTN and FLN Flushing Water Reservoirs despite the relatively small construction footprint. Considerable site formation works would be required comprising cut/ fill slopes of up to 62m

and 38m respectively at a maximum 40 degree gradient. Detailed engineering design of the reservoirs is not finalised however, measures to minimise changes to natural terrain, reduce land take and reduce overall earth movements should be integrated within the works. Retaining walls should also be considered as well as cut slopes where this would allow reduced landform changes. Engineered slopes should integrate tree/shrub planting across the face to help screen and visually integrate these features with the surrounding landscape. The engineered landform should be carefully detailed so that these slopes can tie into existing natural contours beyond the works area. Landscaping of the reservoir roofs will also help to mitigate the impact to the shrubland/ grassland (no trees will be planted on the roof itself) by creating a green vegetated area rather than hardscape surface. Planting of climbers to grow up vertical surfaces where appropriate would also soften any wall structures and break up uniform surfaces. By implementing all these measures as well as taking care to landscape any slopes that are formed and implement protection, preservation, transplantation and compensatory planting for trees, the impact is considered to reduce to moderate at operation day 1. With soft landscaping maturing and conferring greater mitigation by year 10 of operation, the impact is considered to be slight.

It is considered that all the remaining impacts to LRs could be mitigated to slight or insignificant at the construction stage through mitigation works.

12C.27.3 Visual Impact

In summary, the visual impact assessment determined that VSRs in the vicinity of FVP25 Residential Block, Wah Sum Estate would experience moderate/ substantial adverse visual impacts as a result of the construction of the FLN FWSR (DP7). These impacts would result from the loss of natural hillside terrain through the large scale earthwork operations required to form the level area required for the reservoir platform and upper slope stabilisation. In operation day 1 this is considered to reduce to moderate as the scale of the construction footprint will reduce and visual mitigation measure such as screen planting will have been implemented. Measures such as screen planting around the perimeter of the facility, on engineered slopes and green roof treatment across the reservoir itself will assist greatly in breaking up the appearance of the DP within its landscape setting. Whilst these mitigation measures can assist in reducing the adverse operational visual impacts, it is unlikely they could ever fully mitigate the intrusion of engineered forms (reservoir and slopes) into a natural landscape setting. It is predicted that at year 10, once visual mitigation measures have fully established and reached a sufficient level of maturity that the residual impact significance could be reduced to slight. This takes into account the extent and high visibility of infrastructure corridors (MTRC East Rail and Fanling Highway) within the valley floor. These features are considered large scale visual detractors; when the reservoir is seen in the

context of these features, it is considered the overall visual impact of the DP would be less severe.

Prior to visual mitigation works, VSRs in the vicinity of KVP10 (K5b north) Southern Knoll of Fung Kong Shan are predicted to experience moderate / substantial adverse impacts due to the construction and operation of the KTN FWSR (DP7). As in the case of the FLN FWSR, the principal source of the impact is derived from the major earthworks operations to form the platform for the reservoir and the visibility of stabilisation works to the upper slope faces, all set within a large area of natural landscape. Due to the visual openness of the receiving landscape, as a result of low level shrubland ground cover, the construction works are likely to be highly visible from a wide area. Following application of mitigation measures including screen planting around the perimeter of the facility, on engineered slopes and green roof treatment across the reservoir it is considered by operation (day 1) these visual impacts will reduce to a moderate level as construction movements, open ground and slope cutting works will have ceased and overall works area reduced. At this stage, visual mitigation measures will not have achieved a level of maturity that would fully assist with the visual integration of the development into the receiving landscape. It is predicted the residual impact significance at year 10 of operation would reduce to slight following mitigation works reaching a sufficient level of maturity. This assessment takes into account the future visibility of road development forming part of DP4, residential and potential activity centre development forming part of the KTN NDA which would be seen in front of the reservoir within the lower valley. In this case these new developments would provide an urban context to the DP which would lessen the impact severity of the reservoir from the VSR.

Moderate adverse impacts during construction have been predicted for FVP4 Corner of San Wan Road and San Po Street, FVP6a Highpoint above Fu Tei Au Tsuen, facing south and FVP12 Lung Sum Avenue adjacent Woodland Crest. In relation to FVP4, the moderate adverse impacts predicted at the construction stage prior to mitigation relate to DP11, construction works of the SWHSTW would be visible, whilst it is considered that the visual impact will reduce to slight at operation as the type of view experience would not have large change given the established development of the SWHSTW in this view. By implementing screen planting, vertical greening and green roof, the residual impact is considered to be insignificant at operation.

In the case of VSRs in the vicinity of FVP6a, the impacts are generated by the construction stage of the SWHSTW upgrading and extension works (DP11) and TSE at SWHSTW (DP7). These impacts are generated by the combination of the construction footprint of these adjoining sites together with the likely visually intrusive scale of the construction operations (demolition and plant assembly). As these new large scale structures will be visually associated with the existing STW,

slaughter house facilities, engineered channel of the Ng Tung River and wider urban and industrial setting, increasing the overall footprint of industrial form in the local landscape, the level of impact is considered to remain at a moderate adverse level during construction and operation day 1 post mitigation. Ultimately once screen planting, vertical greening and green roof measures have been implemented and planting has established then the level of impact at operation year 10 would reduce to slight.

In relation to FVP12, the moderate adverse impacts predicted at the construction stage prior to mitigation relate to DP13 SPS opposite Sacred Hill and respond to the high sensitivity of residential VSRs in the vicinity. Given the small scale nature of the DP, it is considered these impacts can be reduced to slight during the construction mainly through screening measures, green roofing and vertical greening combined with good site practices (screen hoarding and light control). The site has been previously disturbed through levelling works and sits within a wider visual setting of the channelized Ng Tung River; in the future developments forming part of the FLN NDA will also be seen within the view. In this case, also taking into consideration the low height and footprint of the DP, the level of impact would drop to insignificant during the operation stages post mitigation. The impacts in relation to FVP11 Sitting out area adjacent to road bridge over Ng Tung River relate to the same DP and impact mitigation corresponds to the same influences and outcome.

It is considered that all remaining VSRs could be mitigated to slight and insignificant at the construction stage through mitigation works.

12C.27.4 Cumulative impacts

Cumulative impacts are assessed for concurrent developments together with the wider NDA projects as follows.

12C.27.5 FLN & KTN NDA

The assessment of impacts in relation to LRs and LCAs in this section has considered the construction of the schedule 2 DPs in isolation so that it is possible to identify and quantify their specific influences and contributions to potential landscape and visual impacts within the wider NDA projects. In general the construction footprint of the schedule 2 DPs are significantly smaller than the schedule 3 components and the associated impacts on LRs and LCAs are also far smaller. When considered together the impact of the schedule 2 projects would not alter the outcome of the Schedule 3 assessment as this has taken into the account the same LRs/LCAs within broadly the same study area. It is only on the periphery of the urban area where the schedule 2 DPs potentially exert additional impact on LRs and LCAs beyond the construction footprint of the Schedule 3 works such as both KTN and FLN Flushing Water Service Reservoirs. In both cases the assessment

has identified that these works cannot be fully mitigated through direct landscape mitigation compensation and the principal method of dealing with their presence would be through visual mitigation.

In the case of the FLN FWSR, the cumulative impact of the DP would not change the current assessment as the FLN NDA is remote from the associated works area.

In relation to KTN FWSR, this would be seen in the context of the far larger proposed KTN fresh water service reservoir which would be located to the east of the DP on the same hillside. In this case the overall cumulative impact is likely to become more severe (from slight to moderate) in the operational stage year 10 scenario due to the large extent of the hillside that will be affected.

In terms of visual impact, the DP13 SPS structures will be integrated directly within or around the FLN NDA therefore in operation, they will be seen in the context of the new urban development of which they will form a very small component. In this case there would be no change in the impact assessment.

12C.27.6 Agreement No. CE42/2006(TP) Planning Study on Liantang/Heung Yuen Wai Cross-boundary Control Point and its Associated Connecting Roads in Hong Kong – Feasibility Study.

A new Boundary Control Point (BCP) is proposed to be constructed at Liantang/Heung Yuen Wai together with its connecting roads and other associated works. These works involve a tunnel portal which will appear on the same hillside, approximately 500m further to the south together with associated road infrastructure (on viaducts) which connect to the Fanling Highway. There will be a significant intrusion of new road into the open valley landscape in the vicinity of the reservoir which will have a far greater operational footprint. In this case, this case there may be a marginal increase in the cumulative impact from high sensitivity VSRs with a view of this area. However, the visual impact mitigation measures associated with the reservoir would ultimately assist the development to become more recessive into the landscape setting through greening, becoming less associated with the wider highway infrastructure works which are a more dominant visual detractor.

12C.27.7 Agreement No. CE53/2008(CE) Planning and Engineering Study on Development of Lok Ma Chau Loop - Investigation

The LMC Loop eastern connection road lies within the study area of KTN NDA; this will link to DP 4 (KTN NDA Road D1 to D5) distributor road south of Ma Tso Lung. This project is remote from the DPs within this assessment; there would be no cumulative impacts.

12C.27.8 Widening of Tolo Highway/ Fanling Highway between Island House Interchange and Fanling (Stage 2)

This project falls on the outer visual setting of the FLN FWSR, where it may form part of the view from existing sensitive VSRs. In this case, as the works are well contained within the highway corridor, it is unlikely to affect the assessment. In terms of landscape impacts, there are also not affected.

12C.27.9 Construction of cycle tracks and the associated supporting facilities from Sha Po Tsuen to Shek Sheung River.

This project is remote from the DPs within this assessment; there would be no cumulative impacts.

12C.27.10 Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery.

The Sandy Ridge site is located to the north of the two NDA sites, to the east of the NG Tung River and adjacent to Lo Wu MTR station at the border with Shenzhen. This project is remote from these DPs and there would be no cumulative impact.

12C.27.11 Overall Conclusion

It is considered that work in relation to the SWHSTW comprising DPs 7 and 11 (including the expansion, upgrading and adjacent utilisation of TSE) and the proposed SPS in FLN NDA (DP13) would generally be acceptable within the receiving landscape both in term of landscape and visual impact. Through the application of mitigation measures, principally compensatory planting (for screening and replacement trees) and sensitive detailed design of the future developments, the majority of impacts during the construction stage can be controlled to slight or insignificant levels. In operation these impacts can all be mitigated to insignificant or slight levels at an early stage when landscape planting has matured, providing effective screening and compensation for loss of landscape resources incurred at the construction stage.

In this case, tree screening mitigation measures combined with landscape treatments to engineered slopes can assist in reducing the visual impact of the reservoir developments to slight adverse impacts at operational stage year 10. It is considered that, providing full implementation of the recommended mitigation measure that visually these developments would be acceptable within the landscape setting.

On review of the likely residual impacts and possibility to reduce all to slight or insignificant level by operational year 10, it is considered that DPs 7, 11 and 13 would be acceptable in terms of landscape and visual impacts.

12D DP Package D

12D.1 Introduction

This section reports on the Study to assess the potential landscape and visual impacts arising from construction and operation of any above ground structures and works areas associated with the Schedule 2 DPs 8, 9, 10 and 12 in FLN NDA only.

The components of DP Package D are summarised in **Table 12D.1.1** below.

Table 12D.1.1 - Schedule 2 DP Package D

DP Package D			
8	Po Shek Wu Interchange Improvement (Major Improvement)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.
9	Fanling Bypass Western Section (New Road)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.
10	Fanling Bypass Eastern Section (New Road)	A1	A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road.
12	Reprovision of temporary wholesale market in FLN NDA	N3	A wholesale market.

12D.2 Review of Planning and Development Control Framework

This section provides an overview of the HKSAR Government's development intentions, statutory land-use and planning within the Study Areas, specifically from landscape and visual standpoints. It considers relevant, published studies, such as HK2030 Study, OZPs, and DPA Plans. This information has been considered in relation to the relevant revised RODP of the NDAs and their Layout Plans with the aim of assessing whether the Project can fit into the surrounding setting.

During public consultations, people were noted to be concerned about the landscape and visual impacts of the noise barriers specifically. Some people also suggest maximising the greening opportunities. The planning proposal for the NDAs which includes the Schedule 2 DPs

therefore aims to minimise the area needing noise barriers and maximize the greening opportunities to reduce the landscape and visual impacts.

12D.2.1 Design measures adopted within the Schedule 2 Designated Projects

The Schedule 2 DPs form the key infrastructure developments to support the future development and population growth within KTN and FLN NDAs. KTN and FLN NDAs will provide a mix of housing types as well as basic infrastructure and community facilities. The development opportunities and constraints of the Schedule 2 DPs are presented in **Section 2.4.1**, these have informed the development and consideration of alternative infrastructure options. A summary of the key design rationale for each project is provided below:

DP8 - Po Shek Wu Interchange Improvement (Major Improvement)

The Po Shek Wu Interchange is currently exceeding its junction capacity. In order to cater for the traffic flow from the FLN NDA, improvement work, including realignment of the Po Shek Wu Road and the construction of an elevated southbound right-turning slip road to bypass the interchange, is proposed.

The selected scheme has been designed to minimise the land total requirement, avoid encroachment upon the proposed neighbouring public rental housing site, Tai Tau Leng village at the west and Choi Po Court at the east. In addition, existing mature tree planting on either side of the road has been taken into account within the alignment. In this case the proposed slip road will be elevated above the existing Po Shek Wu Road, at a level of +20mPD (i.e. road infrastructure has been stacked to reduce the overall footprint and accommodated the improvement works within the existing constraints).

DP 9 - Fanling Bypass Western Section (New Road)

The proposed Fanling Bypass Western Section provides a linkage between the Man Kam To Road and the proposed Fanling Bypass Eastern Section. The planning intention is to arrange the bypass at the northern periphery of FLN NDA alongside Ng Tung River, such that through traffic will be diverted away from the town centre to minimise the environmental impact of the traffic to FLN NDA.

The alignment of the road sits within the level ground to the north of Ng Tung River and generally runs parallel to the channel adjacent to the existing access track. The alignment avoids disruption of more natural topography found to the north.

DP 10 – Fanling Bypass Eastern Section (New Road)

The proposed Fanling Bypass Eastern Section provides a direct bypass linkage between FLN NDA and Sha Tau Kok Road (STKR) with the Fanling Highway Tai Po direction. Generally the Fanling Bypass Eastern Section is wholly elevated, except an underpass portion near Lung Yeuk Tau. There are footbridges across Fanling Highway and at the Lung

Yeuk Tau Interchange. A key design measure of this route responds to feedback during the public engagement on improving traffic conditions around STKR Luen Wo Hui Section and Wo Hop Shek Interchange.

In this case the road is elevated predominantly on a viaduct to minimise the proposed land take, disturbance to natural terrain and reduce the operational footprint. The alignment also follows the outer edge of the existing urban development area to avoid further encroachment to the east within the less development and more natural areas.

DP 12 – Reprovision of Temporary Wholesale Market

The North District Temporary Wholesale Market for Agricultural Products will be affected by the NDA development. Reorientation of the existing site in the current location so that it fits with the alignment of the new road (DP 10) is proposed. This approach means this established land use is not displaced to another location, potentially exerting land pressure elsewhere.

The precise details of the development at this stage are not confirmed however the facilities would include temporary style stalls (i.e. moveable) of approximate 2-3m height. The number of stalls would vary depending on seller requirements; this cannot be ascertained at this time. The majority of the facility is the creation of flexible open space/hardstanding to accommodate these facilities. Perimeter security fencing 3pprox.. 2.5m high to replace the existing would be provided together with an access booth for security personnel.

12D.2.2 Existing Outline Zoning Plans (OZPs)

The review of the OZPs has included a review of the Plans as well as the accompanying Notes and Explanatory Statements. The DP sites and study areas have been superimposed onto existing OZPs and DPA Plans to determine the potential influence on the existing zoning. The study areas and site boundaries for DPs 8, 9, 10, and 12 have been combined on **Figure 12.50.4**.

The FLN DPs 8, 9, 10 and 12 study areas are covered by the following OZP/DPA documents:

- Draft Fanling/Sheung Shui OZP No. S/FSS/17.
- Approved Fu Tei Au and Sha Ling OZP No. S/NE-FTA/12.
- Approved Kau Lung Hang OZP No. S/NE-KLH/11.
- Draft Lung Yeuk Tau and Kwan Tei South OZP No. S/NE-LYT/15.
- Approved Hok Tau OZP No. S/NE-HT/5.
- Approved Hung Lung Hang OZP No. S/NE-HLH/7.

Table 12D.2.1, summarizes the areas of existing zoning types which will be directly affected by the site boundary of each DP. In some cases, as

the DPs are located within or traverse different OZP/DPA areas, this has been highlighted in the tables accordingly.

Table 12D.2.1- Schedule 2 Designated Project 8, 9, 10 and 12.

Zoning Type	OZP/DPA number and extent of zoning within the site boundary that will undergo change (ha)	Comments on Major land use changes
DP8 – Po Shek Wu Interchange Improvement		
Green Belt (GB)	S/FSS/17 0.42	Approximately 0.42ha of the zoning type would be modified at the junction point with the Fanling Highway south Tai Tau Leng.
Industrial (I)	S/FSS/17 1.87	Approximately 1.87ha of this zoning type located to the west of Po Shek Wu Road would be modified, between Choi Yuen Road and the MTR East Rail line.
Government /Institution / Community (GIC)	S/FSS/17 0.21	Approximately 0.21ha of this zoning type would be modified, adjacent to the MTR East Rail Corridor and to the south of the Fanling Highway corridor.
Other Specified uses	S/FSS/17 0.67	Approximately 0.67ha of this zoning type would be modified. This zoning relates to the MTR East Rail Corridor. The Po Shek Wu Road at this point is elevated on a bridge and would not directly interfere with this zone.
Open Space (O)	S/FSS/17 0.22	Approximately 0.22ha of this zoning would be affected to the south east of Po Shek Wu Road, close to San Wan Road.
Residential (Group A) (R(A))	S/FSS/17 0.61	Approximately 0.61ha of this zoning would be affected to the east of Po Shek Wu Road.
Village Type Development (V)	S/FSS/17 0.85	Approximately 0.85ha of this zoning would be affected to the west of Po Shek Wu Road.
DP9 – Fanling By-pass Western Section (New Road).		
Agriculture (AGR)	S/NE-FTA/12 11.2	Approximately 11.2ha of this zoning type would be modified starting from the south of Hung Kiu San Tsuen, through Sheung Shui Wa San and to the junction point with the proposed eastern section of the Fanling Highway north of Shek Wu San Tsuen.
Other Specified Uses (OU)	S/NE-FTA/12 2.33	Approximately 2.33ha of this zoning type would be modified as the alignment of the road passes through Hung Kiu San Tsuen.
Green Belt (GB)	S/FSS/17 1.81	Approximately 1.81ha of this zoning type would be modified as the alignment of the road passes to the south of Wa Shan Tsuen.

Zoning Type	OZP/DPA number and extent of zoning within the site boundary that will undergo change (ha)	Comments on Major land use changes
DP10 – Fanling Bypass Eastern Section (New Road)		
Agriculture (AGR)	S/NE-FTA/12 2.45 S/NE-LYT/15 3.02 S/NE-KLH/11 4.44	A total of 9.91ha of this type of zoning will be modified as a result of the road alignment as it travels from north of Wu Nga Lok Yeung, passes Ma Wat Tsuen and the south of Tong Hang Tung.
Green Belt (GB)	S/NE-FTA/12 0.20 S/FSS/17 5.48 S/NE-LYT/15 1.18	A total of 6.86ha of this type of zoning will be modified as a result of the road alignment
Government /Institution / Community (GIC)	S/FSS/17 0.92 S/NE-KLH/11 1.07	Approximately 0.92 ha of this zoning type would be modified by the alignment of the road as it passes through the existing North District Temporary Wholesale Market for Agricultural Products and Water Supplies Department facilities off Sha Tau Kok Road. An additional 1.07ha of this zoning type would be modified at the southern end of the proposed by-pass where the junction is formed with the existing Fanling Highway to the west of Yuen Leng.
Industrial (I)	S/FSS/17 2.64	Approximately 2.64ha of this zoning type will be modified as the alignment of the road passes by the Fanling Industrial area.
Recreation (REC)	S/NE-LYT/15 1.46	Approximately 1.46ha of this zoning type will be modified as the alignment of the road passes through land located to the west of the Cyber Domaine residential development.
Other Specified Uses (OU)	S/NE-LYT/15 2.32	Approximately 2.32ha of this zoning type would be modified as a result of the alignment of the road. 0.36ha of this total would be associated with the proposed bridge crossing of the MTR East Rail track to the west of the existing Cyber Domaine residential development. The remaining 1.96ha is associated with the petrol filling station and amenity area located adjacent to the Fanling Highway east of Wo Hop Shek.
Open Space (O)	S/FSS/17 0.31	Approximately 0.31ha of this zoning would be affected at Wo Hop Shek as a result of viaduct and noise barrier construction.

Zoning Type	OZP/DPA number and extent of zoning within the site boundary that will undergo change (ha)	Comments on Major land use changes
DP12 – Reprovision of wholesale market in FLN NDA		
Government /Institution / Community (GIC)	S/FSS/17 0.61	Approximately 0.61ha of this zoning type would be modified associated with the existing North District Temporary Wholesale Market for Agricultural Products and Water Supplies Department facilities off Sha Tau Kok Road.
Industrial (I)	S/FSS/17 0.7	Approximately 0.7ha of this zoning type would be modified associated with the existing wholesale market area.

12D.2.3 Summary of land use changes

In summary, Schedule 2 DP 8 and 12 would be largely compatible with the existing planning zones. The main conflicts arise in relation to DP 9 and 10 – Fanling Bypass Eastern and Western Sections which cross numerous OZP zones. In this case, approximately 8.67ha of green belt and 21.11ha of agricultural land would be affected.

12D.3 Landscape Baseline Conditions

According to the Study Brief (ESB-176/2008) baseline review comprises the identification of all existing LR and LCA within 500m of the DP boundaries.

The overall Study Area for all the DPs is very generally natural and rural. Complex LRs can be classified into different major categories, as follows:

- LR1 – Channelized Water Course
- LR2 – Water Course
- LR3 – Water Pond
- LR4 – Marsh/ Wetland
- LR5 – Plantation
- LR6 – Hillside Woodland
- LR7 – Lowland Woodland
- LR8 – Shrubland/Grassland Mosaic
- LR9 – Agricultural Land
- LR10 – Open Space / Recreational Area
- LR11 – Urban Development Area
- LR12 – Rural Development Area

- LR13 – Industrial / Open Storage
- LR14 – Major Transportation Corridor
- LR15 - Columbarium

The LCAs are classified as follows:

- LCA1 Natural Hillside Landscape
- LCA2 Rural and Urban Peripheral Village Landscape
- LCA3 Urban Development Landscape
- LCA4 Industrial Landscape
- LCA5 Lowland Agricultural Landscape
- LCA6 Major Transportation Corridor Landscape
- LCA7 Major Water Course Corridor Landscape

The landscape resources and landscape character areas of each NDA are described in further detail below, together with their sensitivity.

12D.3.1 Broad Brush Tree Survey

A Broad brush tree survey has been carried out within the study areas identifying more than 1000 trees affected by the proposed works. Major tree species included *Acacia confusa*, *Acacia auriculiformis*, *Araucaria heterophylla*, *Bauhinia blakeana*, *Bombax ceiba*, *Cassia siamea*, *Celtis sinensis*, *Cinnamomum camphora*, *Clausena lansium*, *Citrus maxima*, *Dimocarpus longan*, *Eucalyptus camaldulensis*, *Ficus virens*, *Ficus microcarpa*, *Litchi chinensis*, *Leucaena leucocephala*, *Macaranga tanarius*, *Mangifera indica*, and *Melaleuca quinquenervia*. Many trees are found in the foothills of the natural upland, as well as the rural fringe in between different villages and they are generally mature.

12D.3.2 Schedule 2 DPs 8, 9, 10 and 12 Baseline Landscape Resources and Landscape Character Areas

The baseline LR and LCAs of FLN DPs 8, 9, 10 and 12 are detailed along with their sensitivity; figures presenting this information are set out below:

Figure 12.51.4 presents LR

Figure 12.51.19 to 27 presents LR enlarged plan versions

Figure 12.51.57 to 67 for representative images of LR.

Figure 12.52.4 presents LCA.

Figure 12.52.11 to 12 for representative images of LCA.

Table 12D.3.1- Landscape Resources and their Sensitivity- FLN DPs 8, 9, 10 and 12

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR 1 - Channelized Water Course					
Refers to modified water courses channelized with concrete or grasscrete, or with gabion-fortified banks, water courses undergoing such channelization. This LR includes both large channelized river water courses as well as some much smaller concrete lined water courses associated with agricultural land. This LR also includes some walkways along the larger water course and the vegetation associated with the water course, both within the channel and along the banks as well as the ridge of the banks. The vegetation mainly consists of grasses and shrubs, but also includes trees in some areas as detailed further in the individual LR descriptions.					
Within the Study Area this LR includes sections of Ng Tung River, Shek Sheung River and Ma Wat River and is one of the prominent landscape features running across a large part of the Study Area.					
1.1	Ng Tung River (Fanling District)	Medium	Medium	Medium	Medium
Ng Tung River (Fanling District) runs in an east-west direction in FLN NDA Study Area. It collects water from Ma Wat River in the east, then Shek Sheung River and Sheung Yue River further west and finally empties into the Shenzhen River outside the study area. Ng Tung River is modified with grasscrete banks and tree planting is found in its immediate vicinity. Dominant plantation tree species are <i>Acacia auriculiformis</i> and <i>Acacia confusa</i> . Other trees also recorded include <i>Ficus virens</i> and <i>Leucaena leucocephala</i> . The river also includes a nullah in the south of the Study Area and some small channels linking through culverts under the banks of the main channel to smaller channelized watercourses which connect to drainage systems and sometimes to more natural watercourses.					
This resource is reasonably tolerant to change and its sensitivity is medium .					
1.2	Shek Sheung River	Medium	Medium	Medium	Medium
Shek Sheung River collects water from the south and flows north, joining the Sheung Yue River west of the Sheung Shui Slaughter House. There is another branch of Shek Sheung River that splits from Ng Tung River and flows round the south of the Shek Wu Hui Sewage Treatment Works. Water drained from Tin Ping San Tsuen low land area flows into this branch after passing through a floodwater storage area. This LR is mainly a grasscrete banked, trapezoidal channel, formed for the purpose of flood protection of the Fanling and Kwu Tung areas. Water partially dries out during the dry season and there is only a small amount of water at the base of the channel, with grass on either side. There are grasses and shrubs along the river's embankment also, as well as trees planted along both sides in many sections of the river. The dominant tree species are exotic, including <i>Acacia auriculiformis</i> , <i>Acacia confusa</i> , <i>Eucalyptus</i> spp. and <i>Leucaena leucocephala</i> . Native trees of lower abundance can also be found, e.g. <i>Celtis sinensis</i> , <i>Cinnamomum camphora</i> , <i>Cleistocalyx operculatus</i> , <i>Ficus microcarpa</i> , <i>Ficus virens</i> and <i>Sapium sebiferum</i> .					
Overall this river is relatively tolerant to change and its sensitivity is considered to be medium .					
1.4	Ma Wat River	Medium	Medium	Medium	Medium
Ma Wat River runs across the southeast part of the FLN NDA Study Area, passing through industrial, rural and agricultural areas. It joins Ng Tung River near Kan Lung Tsuen. Water in the channel decreases significantly during the dry season when its concrete bottom is often partly exposed and dry. There is grasscrete along both its banks, where <i>Imperata koenigii</i> is one of the dominant grasses. Tree planting consisting of large and mature trees is found in the immediate vicinity of this river. Dominant tree species are <i>Acacia confusa</i> , <i>Ficus microcarpa</i> , <i>Melia azedarach</i> and <i>Leucaena leucocephala</i> . Trees with lower abundance include native (<i>Bauhinia blakeana</i> , <i>Celtis sinensis</i> , <i>Macaranga tanarius</i> and <i>Sapium sebiferum</i>) and exotic (<i>Casuarina equisetifolia</i> and <i>Pterocarpus indicus</i>) species.					
Overall this river is relatively tolerant to change and its sensitivity is considered to be medium .					
1.5	Water Course through Ma Shi Po Agricultural Land	Low	Low	High	Low
This LR sits outside the works area and will not be affected.					
This LR describes a channelized concrete watercourse flowing through agricultural land from the Ma Shi Po area towards Ng Tung River where it connects through a concrete channelized link. It is likely to have been used for irrigation purposes, but there is limited water flow and the watercourse is polluted by domestic waste. Vegetation associated with this LR includes the herb species <i>Bidens alba</i> , <i>Eleusine indica</i> and <i>Mikania micrantha</i> .					
This LR is reasonably tolerant to change and its sensitivity is considered to be low .					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR 2 – Water Course Refers to natural or semi-natural water courses, including short sections with concreted banks. This LR also includes vegetation associated with the water course, both within the streams and along the banks as well as in the immediate vicinity. The vegetation mainly consists of grasses and shrubs, but also includes some trees in certain areas such as the upland streams, as detailed further in the individual LR descriptions. The vegetation often provides a subtle transition between this LR and its surrounding LR(s). Within the Study Area, this LR includes watercourses running down from different hills into lowland areas.					
2.1	Natural Streams in Tin Ping Shan Agricultural Land	Medium	Medium	Medium	Medium
This LR sits outside the works area and will not be affected. Refers to a natural stream passing through Tin Ping Shan (Sacred Hill) agricultural land and finally flowing into the channelized Shek Sheung River. This is a narrow stream with grasses and climbers overgrowing along its banks. The grasses mainly include <i>Bidens alba</i> , <i>Polygonum chinense</i> and <i>Oxalis corymbosa</i> . Although parts of this stream are more natural, much of it passes through development areas and is adjacent to open storage areas. It is degraded by pollution while some sections of the stream are fortified by concrete banks. This LR has medium tolerance to change and its sensitivity is considered to be medium .					
2.2	Natural Streams at Cham Shan and Wa Shan	Medium	Medium	Low	Medium
This LR sits outside the works area and will not be affected. This natural stream comes from Cham Shan and flows down to the lowland rural area in the northwest of the FLN NDA Study Area. It is not perennial and water flow may cease during the dry season. The banks of this stream is overgrown with common grasses such as <i>Alocasia odora</i> , <i>Bidens alba</i> and <i>Panicum maximum</i> , particularly in the upstream sections where it flows through extensive grasslands. Within the downstream sections in lowland rural areas, its banks are partially paved in places and the water quality is low as rubbish is commonly found near and in the stream. This LR is not of high quality but it is relatively intolerant to change. The sensitivity is considered to be medium .					
2.3	Natural Streams at Lung Shan	Medium	Medium	Low	High
This LR sits outside the works area and will not be affected. This LR refers to natural streams located at the foothill of Lung Shan and running through all heavily vegetated areas. The streams are intermittent and cease flowing during the dry season. Grasses and climbers grow along their banks. These include <i>Alocasia odora</i> and <i>Cuscuta chinensis</i> as well as some invasive species such as <i>Mikania micrantha</i> . This LR is relatively intolerant to change and its sensitivity is considered to be high .					
2.4	Natural Streams at Siu Hang San Tsuen	Medium	Medium	Low	High
This LR describes streams at around Siu Hang San Tsuen. Stream banks are colonized by common species such as <i>Commelina diffusa</i> , <i>Polygonum lapathifolium</i> , <i>Alocasia odora</i> and <i>Macaranga tanarius</i> . Part of one stream at Siu Hang San Tsuen is regarded as ecologically important due to its naturalness and moderately diverse aquatic community. This LR is relatively intolerant to change and its sensitivity is considered to be high .					
2.5	Natural Streams at Kau Lung Hang, Yuen Leng and Nam Wa Po	Medium	Medium	Low	High
This LR sits outside the works area and will not be affected. Refers to a natural stream passing through Kau Lung Hang San Wai, Kau Lung Hang Lo Wai and Yuen Leng from Kau Lung Hang Shan and finally flowing into the main channel, also includes streams in Nam Wa Po. The streams are intermittent and cease flowing during the dry season. Grasses and climbers grow along their banks such as <i>Alocasia odora</i> , <i>Bidens alba</i> and <i>Panicum maximum</i> . This LR is relatively intolerant to change and its sensitivity is considered to be high .					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR 3 – Water Pond					
Refers to freshwater ponds. The ponds are often associated with agricultural land and used for irrigation, and punctuate the traditional field pattern. Some ponds are also found near residential or developed areas, and have aesthetic, landscape value and some are fish ponds. This LR also includes vegetation associated with the ponds, both within and around the banks as well as in the immediate vicinity. The vegetation mainly consists of grasses and shrubs, with scarce trees. These water ponds are mainly in Fu Tei Au in FLN NDA and Lung Yeuk Tau.					
3.3	Fu Tei Au Water Ponds	Low	Medium	Low	Medium
This LR sits outside the works area and will not be affected. This is a group of water ponds located between Fu Tei Au Road and Ng Tung River. The ponds were most likely used for commercial fish farming and for irrigation purposes in the past and have now mainly been abandoned. Common grasses (e.g. <i>Bidens alba</i> and <i>Pennisetum</i> spp.) and small trees (e.g. <i>Bombax ceiba</i> and <i>Leucaena leucocephala</i>) grow densely along the banks. Trees are planted or naturally have established themselves on the pond bunds; these include <i>Macaranga tanarius</i> , <i>Litchi chinensis</i> , <i>Dimocarpus longan</i> and <i>Ficus hispida</i> . The quality and significance of this LR is relatively low, but it is intolerant to change. Its sensitivity is therefore considered as medium .					
3.4	Water Ponds in Eastern Rural Area	Low	Medium	Low	Medium
This LR sits outside the works area and will not be affected. There are two isolated ponds located in Lung Yeuk Tau in the east of Study Area, one in San Uk Tsuen and the other one in Ma Wat Tsuen. Both are no longer used and not actively managed. Grasses and climbers grow along their banks and are also present in their immediate vicinity. The water surface of these ponds is largely colonized by plants. This LR has low landscape quality and is small in area but it is relatively intolerant to change. Its sensitivity is medium .					
3.5	Wai Loi Tsuen Pond	Low	Medium	Medium	Medium
This LR sits outside the works area and will not be affected. This LR is on the periphery of Wai Loi Tsuen serving as the moat of this traditional village. It has concrete banks and is connected with the Shek Sheung River to its west. Overall these ponds have medium amenity value and are relatively intolerant to change. This LR’s sensitivity is considered to be high .					
3.6	Water Pond in Nam Wa Po	Low	Medium	Medium	Medium
This LR sits outside the works area and will not be affected. This LR is located in Nam Wa Po in the south of Study Area. The ponds were most likely used for commercial fish farming and for irrigation purposes in the past and have now mainly been abandoned. Common grasses (e.g. <i>Bidens alba</i> and <i>Pennisetum</i> spp.) and small trees (e.g. <i>Bombax ceiba</i> and <i>Leucaena leucocephala</i>) grow along the banks. The quality and significance of this LR is relatively low, but it is intolerant to change. Its sensitivity is therefore considered as medium . Since this is a LR with significant artificial characteristics, it is relatively tolerant to change, however the moat has cultural landscape significance and therefore its sensitivity is considered to be medium .					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR 4 – Marsh/ Wetland					
Refers to freshwater wetland landscape resources. Some of them are found at old river meanders which have been truncated during river channelization and retraining, overgrown with herbaceous vegetation and often with some areas of seasonal or permanent open water.					
Within the Study Area, this LR is found along certain sections of Ng Tung River.					
4.2	Mitigation Wetland	Medium	High	Low	High
Several plots of marsh are located along Ng Tung River. They were formerly meanders of the river and were isolated during the river channelization. To mitigate the ecological impact resulting from channelization, these areas are now managed by a government department to provide marsh habitat, mainly for wetland dependent wildlife and are hence a wetland landscape resource. Wetland plants and riparian vegetation have been planted and include <i>Commelina diffusa</i> , <i>Hedychium coronarium</i> , <i>Ludwigia perennis</i> and <i>Nelumbo nucifera</i> . Bamboos and trees are also planted along the bunds, e.g. <i>Acacia auriculiformis</i> , <i>Cinnamomum camphora</i> , <i>Hibiscus tiliaceus</i> and <i>Ilex rotunda</i> .					
This LR had medium quality and maturity and in general marsh habitats are reasonably rare in Hong Kong. Additionally this LR is relatively intolerant to change so its sensitivity is considered to be high .					
FLR 5 – Plantation					
Refers to medium sized and larger clusters of trees that have been planted and are distinct from natural woodland in terms of species composition since they have been planted by man. Common tree species in this LR include <i>Ficus virens</i> , <i>Ficus microcarpa</i> , <i>Acacia confusa</i> , <i>Bombax ceiba</i> , <i>Macaranga tanarius</i> and <i>Melaleuca quinquenervia</i> . Further details are given in the individual LR descriptions.					
Within the Study Area this LR is found in the vicinity of Wai Loi Tsuen, Hak Ka Wai, Ha Pak Tsuen, On Kwok Villa and Noble Hill.					
5.1	Plantation in the Vicinity of Wai Loi Tsuen	Medium	Medium	High	Medium
This LR sits outside the works area and will not be affected.					
A mixture of native and exotic trees is planted around the moat of Wai Loi Tsuen and its vicinity, serving as a good screen for the road and industrial area to the west of the village. Compared to those trees planted immediately along the Shek Sheung River in its vicinity, trees in this plantation have a relatively higher diversity, including native species (<i>Bauhinia blakeana</i> , <i>Celtis sinensis</i> and <i>Ficus microcarpa</i>) and exotic species (<i>Acacia confusa</i> , <i>Aleurites moluccana</i> , <i>Bombax ceiba</i> , <i>Cassia siamea</i> , <i>Casuarina equisetifolia</i> , <i>Eucalyptus citriodora</i> , <i>Grevillea robusta</i> , <i>Lagerstroemia speciosa</i> and <i>Melaleuca quinquenervia</i>).					
This LR has medium amenity value and relatively high capacity to accommodate change and its sensitivity is considered to be medium .					
5.2	Ha Pak Tsuen Plantation	High	Medium	Low	High
This LR sits outside the works area and will not be affected.					
A patch of plantation is located to the east of Ha Pak Tsuen. Trees are densely planted within the village as well as along the nearby roads leading to the village to enhance the landscape value of this area. Among these planted trees, Chinese Banyan <i>Ficus microcarpa</i> is one of the most prominent trees as most of them are mature and large. Other tree species include native (<i>Macaranga tanarius</i>) and exotic (<i>Acacia confusa</i> and <i>Bombax ceiba</i>) species.					
Although this resource was originally man made, it now has many large, mature trees in a traditional village setting and this is harder to recreate, so it has a relatively low capacity to accommodate change. Its sensitivity is considered to be high .					
5.3	Plantation in the Vicinity of On Kwok Villa and Noble Hill	Medium	Medium	Medium	Medium
This LR sits outside the works area and will not be affected.					
There is significant plantation on the periphery of On Kwok Villa and Noble Hill mainly along Tin Ping Road, Lung Sum Road, Ma Sik Road and a branch of Ng Tung River. Trees planted in this area are reasonably mature and dense. They include native (<i>Ficus virens</i> , <i>Ficus microcarpa</i> , <i>Bauhinia blakeana</i> and <i>Macaranga tanarius</i>) and exotic (<i>Bombax ceiba</i> , <i>Cassia siamea</i> , <i>Delonix regia</i> , <i>Eucalyptus</i> spp., <i>Ficus religiosa</i> and <i>Melaleuca quinquenervia</i>) species.					
Although trees in this LR provide a certain high landscape value, the trees are set amongst modern residential areas. The LR was originally a man-made resource and is able to be recreated fairly easily meaning it has a reasonable capacity to accommodate change. Its sensitivity is therefore considered to be medium .					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
5.4	Plantation South of Fanling Highway	High	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR mainly includes a plantation patches found just north of Hong Kong Golf Club and trees commonly recorded in this area include native (<i>Cinnamomum camphora</i>, <i>Ficus virens</i> and <i>Macaranga tanarius</i>) and exotic species (<i>Acacia confusa</i>, <i>Bombax ceiba</i>, <i>Melaleuca quinquenervia</i> and <i>Leucaena leucocephala</i>).</p> <p>Trees in this LR are dense and mature, providing a relatively high landscape value. However, it is a man-made resource and is able to be recreated reasonably easily meaning it has a high capacity to accommodate change. Its sensitivity is therefore considered to be medium.</p>					
5.5	Plantation in the Vicinity of Hak Ka Wai	Medium	Medium	High	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This area of plantation is largely associated with the narrow Sheung Yue River channel and the villages of Hak Ka Wai and Tsung Pak Long, including in their playground areas and public facilities. This plantation generally comprises exotic tree species dominated by <i>Acacia confusa</i>. Other species of lower abundance include exotic species (<i>Acacia auriculiformis</i>, <i>Acacia mangium</i>, <i>Araucaria heterophylla</i>, <i>Casuarina equisetifolia</i>, <i>Livistona chinensis</i> and <i>Leucaena leucocephala</i>) and native species (<i>Cinnamomum camphora</i>, <i>Ficus microcarpa</i>, <i>Macaranga tanarius</i>).</p> <p>This LR has a relatively high capacity to accommodate change and its sensitivity is considered to be medium.</p>					
<p>FLR 6 - Hillside Woodland</p> <p>Refers to woodland areas largely scattered over hillsides, including at the base of hills and associated patches of woodland. This LR is predominantly composed of native tree species and is <i>generally</i> located some distance from intense human activities (except at the base of hills where it often borders rural development areas), growing naturally with some understory vegetation. Common tree species in this LR include <i>Acacia confusa</i>, <i>Macaranga tanarius</i>, <i>Ficus microcarpa</i>, <i>Dimocarpus longan</i>, <i>Celtis sinensis</i>, <i>Cinnamomum camphora</i> and <i>Ficus hispida</i>. Further details are given in the individual LR descriptions.</p> <p>Within the Study Area, this LR is largely scattered at the foothill of Cham Shan, Wa Shan, Lung Shan and Wa Mei Shan.</p>					
6.1	Sheung Shui Water Treatment Works Hillside Woodland	High	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>Several small patches of woodland lie at the eastern base of the hillside surrounding Sheung Shui Water Treatment Works. Trees grow naturally and densely in this area and dominant species include <i>Macaranga tanarius</i>, <i>Celtis sinensis</i>, <i>Cinnamomum camphora</i>, <i>Melia azedarach</i> and <i>Leucaena leucocephala</i>.</p> <p>This LR is relatively mature and intolerant to change. The sensitivity of this LR is considered to be high.</p>					
6.2	Cham Shan and Wa Shan Hillside Woodland	High	Medium	Low	High
<p>This LR refers to the relatively large and continuous woodlands along the foothills of Cham Shan and Wa Shan to their northern, western and southern sides, bordering shrubland/grassland on the higher ground above and rural villages and agricultural lands in the lowland area below. Due to limited human disturbance, these trees are mature in medium to large sizes. Dominant tree species include both native and exotic ones. Dominant native trees are <i>Celtis sinensis</i>, <i>Cinnamomum camphora</i>, <i>Ficus hispida</i>, <i>Ficus variegata</i> var. <i>chlorocarpa</i>, <i>Rhus succedanea</i>, <i>Sapium discolor</i>, <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i>. Dominant exotic species include <i>Melia azedarach</i>, <i>Dimocarpus longan</i>, <i>Syzygium jambos</i>, <i>Leucaena leucocephala</i>, <i>Acacia confusa</i> and <i>Casuarina equisetifolia</i>.</p> <p>This LR is considered to be relatively mature and of high quality and it has little capacity to tolerate change. The sensitivity of this LR is considered to be high.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
6.3	Ma Wat Wai Hillside Woodland	High	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to a small and isolated woodland patch embracing Ma Wat Wai on all sides expect the northeast. A mixture of exotic and native trees as well as many bamboos are present in this area. Dominant trees include native species (<i>Celtis sinensis</i>, <i>Ficus microcarpa</i>, <i>Ficus hispida</i>, <i>Sterculia lanceolata</i>, <i>Rhus succedanea</i> and <i>Sapium discolor</i>) and exotic species (<i>Dimocarpus longan</i> and <i>Melia azedarach</i>).</p> <p>This is a mature resource and of relatively high quality. It has little capacity to tolerate change. Its sensitivity is considered to be high.</p>					
6.4	Hillside Woodland at Lung Shan and Wa Mei Shan	High	Medium	Low	High
<p>This LR covers part of the woodlands on the foothill of Lung Shan to the northeast of Fanling Highway and the foothill of Wa Mei Shan to the southwest in the vicinity of Wo Hop Shek. This resource includes mature woodland trees growing on hillside slopes, including native species (<i>Celtis sinensis</i>, <i>Macaranga tanarius</i>, <i>Ficus hispida</i>, <i>Ficus microcarpa</i> and <i>Litsea glutinosa</i>) and exotic species (<i>Acacia confusa</i>, <i>Eucalyptus</i> spp., <i>Dimocarpus longan</i>, <i>Melia azedarach</i> and <i>Syzygium jambos</i>).</p> <p>The quality and landscape value of this LR is relatively high, with little tolerance to change and its sensitivity is considered to be high.</p>					
<p>FLR 7 – Lowland Woodland</p> <p>Refers to woodland growing on low ground (generally <40 mPD), often found near rural village areas of human activities in small, fragmented patches, with differing tree species according to location. Common tree species found in this LR include <i>Dimocarpus longan</i>, <i>Cinnamomum camphora</i>, <i>Macaranga tanarius</i>, and <i>Leucaena leucocephala</i>. Further details are given in the individual LR descriptions.</p> <p>Within the Study Area, this LR is found in Fu Tei Au, Hung Kiu San Tsuen, Sacred Hill, Ling Hill, Ling Shan Tsuen, Wong Kong Shan, Tai Tau Leng and North District Hospital.</p>					
7.2	Lowland Woodland at Fu Tei Au and Sheung Shui Water Treatment Works	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to several patches of woodland in Fu Tei Au area and in the close vicinity of Sheng Shui Water Treatment Works. They are generally surrounded by or bordering rural areas and abandoned agricultural lands and so receive moderate human disturbance leading to the vegetation within the LR being of lower quality. Trees in this resource are not diverse and dominated by <i>Dimocarpus longan</i>, <i>Hibiscus tiliaceus</i>, <i>Celtis sinensis</i>, <i>Macaranga tanarius</i> and <i>Cinnamomum camphora</i>.</p> <p>This is a landscape resource of medium quality and has a medium tolerance to change, making its sensitivity medium.</p>					
7.3	Hung Kiu San Tsuen Lowland Woodland	Medium	Medium	Medium	Medium
<p>This LR refers to the lowland woodlands in the vicinity of Hung Kiu San Tsuen, east of Man Kam To Road. These woodlands are largely surrounded by adjacent industrial/open storage areas and therefore potentially suffer from disturbance by human activities making this resource of lower quality than it would otherwise be.</p> <p>These trees are of medium to large sizes, and are dominated by both native and exotic species. The most abundant native species include <i>Celtis sinensis</i>, <i>Ficus microcarpa</i>, <i>Ficus hispida</i>, <i>Bischofia javanica</i>, <i>Cinnamomum camphora</i>, and <i>Macaranga tanarius</i>, while exotic species include <i>Averrhoa carambola</i>, <i>Casuarina equisetifolia</i>, <i>Leucaena leucocephala</i>, <i>Dimocarpus longan</i> and <i>Melia azedarach</i>.</p> <p>This LR has a medium amenity value, relatively low quality, a medium tolerance to change and its sensitivity is considered to be medium.</p>					
7.4	Sacred Hill Lowland Woodland	Medium	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR is located to the east of Tin Ping Shan Tsuen, adjacent to the large Tin Ping Shan Tsuen agricultural lands. Common tree species include <i>Celtis sinensis</i>, <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i>.</p> <p>This LR is relatively intolerant to change and its sensitivity is considered to be high.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
7.5	Ling Hill and Ling Shan Tsuen Lowland Woodland	High	Medium	Low	High
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to the woody areas near the intersection of Ma Sik Road and Jockey Club Road. These woodland patches are on the periphery of and associated with Ling Shan Tsuen. There is an old temple (Sam Sheung Temple) located in this village and it is also surrounded by this woodland. Trees in this resource are fairly large and mature including both native and exotic species. They are native (<i>Celtis sinensis</i>, <i>Ficus microcarpa</i> and <i>Macaranga tanarius</i>) and exotic (<i>Acacia confusa</i>, <i>Delonix regia</i> and <i>Dimocarpus longan</i>).</p> <p>This is a natural resource of high quality and is not able to accommodate change. Its sensitivity is considered to be high.</p>					
7.6	Wong Kong Shan Lowland Woodland	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to a small patch of woodland located at Wong Kong Shan to the southeast of Cheung Wah Estate. This woodland patch is largely surrounded by adjacent residential and industrial areas and therefore potentially suffered from disturbance by human activities making this resource of lower quality than it would otherwise be. Common tree species include <i>Acacia confuse</i>, <i>Bauhinia blakeana</i>, <i>Macaranga tanarius</i></p> <p>This is a landscape resource of medium quality and has a medium tolerance to change, making its sensitivity medium.</p>					
7.7	Lowland Woodland near Tai Tau Leng	Medium	Medium	Medium	Medium
<p>This LR refers to a small patch of woodland located near Tai Tau Ling. This woodland patch is largely surrounded by adjacent industrial/open storage areas and therefore potentially suffered from disturbance by human activities making this resource of lower quality than it would otherwise be. Common tree species include <i>Leucaena leucocephala</i>, <i>Acacia confuse</i> and <i>Cinnamomum camphora</i>.</p> <p>This LR has a medium amenity value and medium tolerance to change. Its sensitivity is considered to be medium.</p>					
7.8	Lowland Woodland at North District Hospital	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to the small patch of woodland located at North District Hospital. This woodland patch is largely surrounded by residential area and GIC area. Human disturbance is medium. Main species include <i>Leucaena leucocephala</i>, <i>Macaranga tanarius</i>, <i>Acacia confuse</i>, <i>Aleurites moluccana</i>, <i>Ficus microcarpa</i>.</p> <p>This LR has a medium amenity value and medium tolerance to change. Its sensitivity is considered to be medium.</p>					
<p>FLR 8 - Shrubland / Grassland Mosaic</p> <p>Refers to a mosaic of shrubland and grassland which is usually large in size and uniform in appearance. This LR is typical of the fire-maintained hill-slopes in Hong Kong and common grass species include <i>Miscanthus sinensis</i>, <i>Neyraudia</i> spp. and <i>Panicum</i> spp. Further details are given in the individual LR descriptions.</p> <p>Within the Study Area, this LR is found largely on hillsides, particularly on Wa Shan, Cham Shan and Lung Shan, as well as some relatively lowland areas to the west of the Study Area.</p>					
8.2	Fu Tei Au Shrubland/Grassland Mosaic	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>This resource is located north of Fu Tei Au Road surrounding the Sheung Shui Water Treatment Works. It is dominated by grasses such as <i>Miscanthus sinensis</i> and <i>Miscanthus floridulus</i> and some small trees including <i>Rhus succedanea</i> and <i>Macaranga tanarius</i> are also present in this area.</p> <p>This LR is of low landscape value and amenity and is relatively tolerant to change. Its sensitivity is low.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
8.3	Shrubland/Grassland Mosaic at Cham Shan and Wa Shan	Medium	Low	Medium	Medium
<p>This is an extensive and continuous resource in the northeast of the Study Area, i.e. the hillsides of Cham Shan and Wa Shan. Similar to most of the other hillsides in Hong Kong, this large area of grassland is also maintained by hill fires and mainly colonized by grasses. Grass and herb species such as <i>Miscanthus sinensis</i>, <i>Neyraudia reynaudiana</i> and <i>Panicum</i> spp. are widespread within the resource. Nevertheless, some patches close to Cheung Po Tau which are undergoing vegetation succession towards shrubland, support higher plant diversity and show more complex floristic structure. Shrubs commonly found in these areas include <i>Melastoma candidum</i>, <i>Rhus succedanea</i>, <i>Rhodomyrtus tomentosa</i> and <i>Sapium discolor</i>.</p> <p>This LR can re-establish itself fairly easily and is therefore considered to be relatively tolerant to change but is of medium quality and maturity. Its sensitivity is considered to be medium.</p>					
8.4	Shrubland/Grassland Mosaic at Lung Shan	Medium	Low	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR is part of the extensive shrubby grassland on the uplands of Lung Shan. It merges into hillside woodland at the foothills and is sometimes adjacent to the urban development area. Similar to the other hilly shrubland/grassland in Hong Kong, this LR is maintained by periodical hill fires.</p> <p>This LR can re-establish itself fairly easily and is therefore considered to be relatively tolerant to change. It is of medium quality and maturity and its sensitivity is considered to be medium.</p>					
FLR 9 - Agricultural Land					
<p>Refers to land used for agriculture including crops and orchards as well as ornamental plant nurseries. This LR contains a small number of structures such as small irrigation ponds, green houses, equipment sheds and small/ narrow hard paved areas. It not only contains agricultural vegetation but also some scattered non-agricultural vegetation including some shrubs and trees. It is often an intermediary between areas of development and natural areas.</p> <p>Within the Study Area, this LR is mainly found in Tin Ping Shan, Ma Shi Po and Sheung Shui Wa Shan.</p>					
9.2	Fu Tei Au Agricultural Land	Medium	Medium	Medium	Medium
<p>Agricultural land in Fu Tei Au area is partially abandoned. Common vegetables such as <i>Brassica parachinensis</i> and <i>Lactuca sativa</i> are grown in the active fields. In those inactive fields, grasses dominated by <i>Miscanthus</i> spp. have colonized the land, with some isolated shrubs and trees growing along the previous field bunds without management. Those trees include <i>Dimocarpus longan</i>, <i>Litchi chinensis</i> and <i>Magnifera indica</i>. The active portion of this LR is of high quality.</p> <p>This LR provides some green space between the hard surfaces of industrial/open storage areas or rural development areas making it locally reasonably important. Agricultural land is fairly easy to re-establish in the right environment and especially given some of this land is abandoned, it has medium tolerance to change. The LR is considered to have medium sensitivity.</p>					
9.3	Agricultural Land between Ng Tung River and Shek Sheung River	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>A patch of active agricultural land is located in the flood area between Ng Tung River and Shek Sheung River, north of Po Wan Road. This agricultural land probably connected with the agricultural land in Tin Ping Shan Tsuen (FLR-9.4) in the past but has now been separated by an open storage area between them (FLR-13.1). The area of this LR is relatively small, but of reasonable quality.</p> <p>This LR has medium value and being agricultural land has medium ability to tolerate change in the right environment. It is considered to have medium sensitivity.</p>					
9.4	Tin Ping Shan Tsuen Agricultural Land	Medium	Medium	High	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>Tin Ping Shan Tsuen agricultural land is located on the north of Tin Ping Shan Tsuen. This is a reasonably sized,un-fragmented area of agricultural land and more than half the fields remain active. In addition to open farmlands, there are also some orchards in which small fruit trees including <i>Musa x paradisiaca</i>, <i>Litchi chinensis</i> and <i>Dimocarpus longan</i> are cultivated.</p> <p>The LR is mature and established and of high quality, yet since it is agricultural land, in the right environment it could be recreated, meaning it has reasonable capacity to accommodate change. It is considered to have medium sensitivity.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
9.5	Agricultural Land at Sheung Shui Wa Shan	Medium	Medium	High	Medium
<p>This LR is located in the lowland area at the foot of Wa Shan, along the eastern bank of Ng Tung River. Much of the agricultural land within this area is abandoned with weeds, climbers, isolated shrubs and banana trees and some other invasive trees (e.g. <i>Leucaena leucocephala</i>) colonizing the land. However some areas are still active and this land is a green resource neighboring village developments.</p> <p>This LR has medium landscape quality and maturity. Being agricultural land it is relatively tolerant to change in the right environment. It is considered to have medium sensitivity.</p>					
9.6	Agricultural Land in Wu Nga Lok Yueng, Siu Hang San Tsuen, Siu Hang Tsuen and Shek Wu San Tsuen	Medium	Medium	Low	Medium
<p>This resource is mainly situated in the east of the Study Area of FLN NDA and includes both active and inactive agricultural lands. A variety of crops are grown in the active fields, including <i>Benincasa hispida</i>, <i>Pisum sativum</i>, <i>Solanum melongena</i> and <i>Lactuca sativa</i>. As a result of human activity of cultivation, vegetation on the bunds of these fields is poorly developed and is dominated by common herbs such as <i>Ageratum conyzoides</i>, <i>Hedyotis diffusa</i> and <i>Kyllinga brevifolia</i> and <i>Lobelia chinensis</i> and few shrubs and trees are present. Some of the inactive fields, due to the lack of management and disturbance for a long time, are beginning to develop naturally into grassland or shrubby grassland with colonisation by herbs, isolated shrubs and small trees.</p> <p>This LR is mature and established yet the land is highly fragmented and overall the LR is not of high quality. Since it is agricultural land, in the right environment it could be re-established, meaning it has reasonable capacity to accommodate change. It is considered to have medium sensitivity.</p>					
9.7	Agricultural Land South of Sha Tau Kok Road	Medium	Medium	Medium	Medium
<p>This resource is situated in the south east of the Study Area of FLN NDA, south of Sha Tau Kok road and near the base of Lung Shan. It includes both active and inactive agricultural lands near Lung Yeuk Tau, Mat Wat Wai and east of Wing Ning Wai, Wing Ning Tsuen and Tung Kok Wai. A variety of crops are grown in the active fields, including <i>Benincasa hispida</i>, <i>Brassica chinensis</i> and <i>Lactuca sativa</i>. For those inactive fields, due to the lack of management, they are beginning to develop naturally into grassland or shrubby grassland with colonisation by herbs (e.g. <i>Alocasia odora</i>, <i>Miscanthus sinensis</i>, and <i>Bidens alba</i>) and small trees (e.g. <i>Ficus hispida</i> and <i>Macaranga tanarius</i>).</p> <p>This LR has medium value and, being agricultural land, is reasonably easy to recreate in the right environment, which means it has medium capacity to accommodate change and it is considered to have medium sensitivity.</p>					
9.8	Other Agricultural Lands in KLN	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to several small and fragmented agricultural lands in different locations within the Study Area of DPs, including Hak Ka Wai and Tai Tau Leng. Most of these agricultural lands have been wholly or partly abandoned and grass and shrubs now grow in the fields. For those fields remaining active, common crops cultivated by farmers include <i>Brassica parachinensis</i> and <i>Lactuca sativa</i>.</p> <p>This LR has low to medium value in terms of crop production and is relatively tolerant to change. It is considered to have medium sensitivity.</p>					
<p style="text-align: center;">FLR 10 - Open Space / Recreation Area</p> <p>Refers to areas that provide recreational use either in the form of playground areas or sports pitches. There is vegetation associated with this LR, as well as landscaped planting.</p> <p>Within the Study Area, this LR is found at North District Sports Ground and Hong Kong Golf Club.</p>					
10.1	North District Sports Ground	Medium	Medium	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>North District Sports Ground is a multi-purpose sports ground located between Jockey Club Road and Tin Ping Road. Facilities provided in this sports ground include natural grass football field, running track, covered grandstand, public leisure pool, basketball/volleyball courts and outdoor and indoor tennis courts. Dominant amenity trees planted in this LR include <i>Ficus microcarpa</i>, <i>Bauhinia blakeana</i> and <i>Bauhinia variegata</i>.</p> <p>This LR has medium landscape value and due to its man-made nature and high percentage of hard landscape, has a high capacity to accommodate change. Apart from the open grass pitch, it has little planting and therefore soft landscape is relatively low value. Overall its sensitivity is considered to be low.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
10.2	Hong Kong Golf Club	High	Medium	High	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>Hong Kong Golf Club is located either side of Fan Kam Road. It is a large private golf club with an extensive greens maintained for golfing activities. Besides the golf course, the club has some built structures including the Club House and facilities to accommodate swimming and tennis, as well as restaurants and accommodation. The Halfway House at Hong Kong Golf Club is graded as a Grade II historic building.</p> <p>Trees, dominated by <i>Melaleuca quinquenervia</i>, are planted around the golf course for landscaping purposes. Water lilies (<i>Nymphaea</i> spp.) are cultivated in the golf course ponds. The entire plantation is well maintained and in good condition.</p> <p>This LR is of high quality and amenity value and covers an extensive area of land; however it is an artificial resource and has a high capacity to accommodate change. Its sensitivity is considered to be medium.</p>					
<p>FLR 11 – Urban Development Area</p> <p>Refers to urbanized areas which are heavily developed with considerable hard paved surfaces and limited landscaped areas. These LR's consist mainly of large clusters of medium to high density buildings with a high degree of related infrastructure and often with some high rise developments, with some associated facilities such as post office, police station, hospital, restaurants, supermarkets etc. The LR also includes work sites where construction is ongoing, or sites being cleared/ formed prior to development of a structure that would form part of an urban area. Vegetation in this LR is mainly landscape planting with scattered amenity shrubs and trees, some small public green spaces and private gardens.</p> <p>Within the Study Area, this LR broadly covers the large urban development areas in Wo Hop Shek , Sheung Shui and Fanling.</p>					
11.2	Sheung Shui Urban Development Area	Low	Low	High	Low
<p>This LR refers to the northeastern part of the Sheung Shui town centre. There are high-rise public (e.g. Tin Ping Estate) and private (e.g. Tsui Lai Garden, On Kwok Villa and Noble Hill) estates, training centres, multi-storey car park and home for the aged located in this area. Gardens and small scale playgrounds can also be found associated with those residential blocks. Amenity trees and shrubs are planted and well maintained to enhance the environment, and the dominant tree species are <i>Melaleuca quinquenervia</i>, <i>Acacia confusa</i>, <i>Bauhinia blakeana</i>, <i>Ficus microcarpa</i>, <i>Bombax ceiba</i>, <i>Cassia siamea</i>, <i>Eucalyptus citriodora</i> and <i>Phoenix roebelenii</i>.</p> <p>This LR has low landscape value and due to its man-made nature, has a high capacity to accommodate change. Its sensitivity is considered to be low.</p>					
11.3	Fanling Urban Development Area	Low	Low	High	Low
<p>This LR mainly covers Luen Wo Hui urban development area in Fanling. Medium and high rise residential buildings (e.g. Fanling Garden, Wing Fok Centre, Wing Fai Centre, Union Plaza, Belair Monte, Grand Regentville), schools (e.g. Fanling Public School, Buddhist Ma Kam Chan Memorial English Secondary School and Fanling Rhenish Church Secondary School), a church (St. Joseph's Church), cinema, commercial complexes and street markets can be found in this area. Gardens and playgrounds of small scale can also be found associated with the residential blocks. Amenity trees and shrubs are planted along roads but are relatively limited. The dominant tree species are <i>Melaleuca quinquenervia</i>, <i>Acacia confusa</i>, <i>Ficus microcarpa</i>, <i>Cassia siamea</i> and <i>Bauhinia variegata</i>.</p> <p>This LR has low landscape value and due to its man-made nature, has a high capacity to accommodate change. Its sensitivity is considered to be low.</p>					
11.4	Wo Hop Shek Urban Development Area	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR refers to the eastern part of Wo Hop Shek urban development area. There are high-rise public estate (Wah Sum Estate) and private estates (Avon Park and Dawning views) as well as a school (Fanling Government Secondary School) in this LR. Amenity trees and shrubs are planted along roads such as <i>Ficus microcarpa</i>, <i>Cassia siamea</i> and <i>Bauhinia variegata</i>. Both native and exotic species can be found in the open area along Pak Wo Road. These include <i>Acacia Confusa</i>, <i>Macaranga tanarius</i>, <i>Leucaena leucocephala</i>, <i>Ficus microcarpa</i> and some bamboo species</p> <p>This LR has low landscape value and due to its man-made nature, has a high capacity to accommodate change. Its sensitivity is considered to be low.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR 12 - Rural Development Area Refers to traditional villages, modern villages and small scale residential areas dominated by domestic structures (mainly of 2-3 stories) interwoven with roads and paths, There are some Ancestral Halls, shrines and temples, and this LR may also contain some facilities such as small police stations, post offices, and covered water reservoirs and pumping stations and some small, managed, recreational areas (such as football and basketball pitches) and small wasteland areas either wholly or partly covered by weedy or sparse vegetation. This LR has a few small orchard areas associated with it and private gardens, as well as amenity planting among the built structures. This LR usually occurs in fragmented patches with agricultural or natural landscape resources adjacent to it. Within the Study Area this LR includes Hak Ka Wai, Fu Tei Au, Sheung Shui lowland area, Lung Yeuk Tau, Wo Hap Shek, Kiu Tau and Nam Wa Po, as well as some areas at the base of Wa Shan and Lung Shan.					
12.2	Rural Development Area in the Vicinity of Fu Tei Au	Low	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR mainly covers the rural area between Fu Tei Au Road and Ng Tung River. Settlements in this area consist predominantly of simple and traditional houses of a single storey, some of which are fenced off. Trees are present both along the roads winding between houses and in private gardens, including <i>Dimocarpus longan</i>, <i>Macaranga tanarius</i> and <i>Aleurites moluccana</i>.</p> <p>Man Ming Temple, constructed before 1924, is located within to the south of this LR. It is a Grade 3 Historic Building which is a three-hall building, with two open corridors on the two sides of the central hall, used to access the end hall.</p> <p>This resource has limited landscape value, but some of its structures have heritage significance and therefore have little ability to accommodate change. Its sensitivity is overall considered to be medium.</p>					
12.3	Rural Development Area in the North of FLN NDA	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR covers the rural development areas in the north of the Study Area and it is partially located within the Closed Area. Main structures included in this LR are the Border District Police Headquarters, Sha Ling Livestock Waste Control Centre, a firing range at the uphill of Cheung Po Tau, as well as some scattered village settlements in Sha Ling. A number of individual Chinese Banyan (<i>Ficus microcarpa</i>) are well maintained along the boundary fence of Border District Police Headquarters, while in other areas there are patches of trees along the roads, most of them without management. These trees mainly include <i>Macaranga tanarius</i>, <i>Acacia confusa</i>, <i>Bombax ceiba</i> and <i>Casuarina equisetifolia</i>.</p> <p>Overall this LR has limited landscape value and high ability to accommodate change. It is considered to have low sensitivity.</p>					
12.4	Rural Development Area in Sheung Shui Lowland Area	Medium	Medium	Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This is a lowland resource where a number of villages are concentrated, particularly in the western part which encompasses Wai Loi Tsuen, Man Kok Village, Mun Hau Tsuen, Po Sheung Tsuen, Ha Pak Tsuen, Chung Sum Tsuen, Sheung Pak Tsuen, Tai Yuen Tsuen and Hing Yan Tsuen (collective named as Sheung Shui Heung/Sheung Shui Wai). The eastern part of this LR includes Tin Ping Shan Tsuen. Fung Kai School with its associated football pitch and several basketball pitches and some mature trees are also located at the centre of this LR.</p> <p>Those villages in the west are well established, consisting of some modern housing of 2-3 storeys and some traditional housing and include one declared monument and two graded historical buildings. Liu Man Shek Tong Ancestral Hall, a declared monument, was built by Liu Man Shek Tong in 1751 at Mun Hau Tsuen. This typical three-hall two-courtyard building is decorated by plaster mouldings, wood carvings and murals of auspicious motifs and pictures. One of the graded historic buildings is Liu Ying Lung Study Hall, situated at Po Sheung Tsuen which is a confirmed Grade 1 Historic Building. It was renovated in 1923 and was once the place where Spring Equinox, births and weddings were celebrated. The other is Old Sheung Shui Police Station, which is a confirmed Grade 2 Historic Building. It was one of thirteen police stations built soon after the British took over the New Territories and later became a police reporting centre and then a Junior Police Call (JPC) Club House after the new Sheung Shui Police Station was opened in 1979. Tin Ping Shan Tsuen in the east is relatively small, mainly consisting of more traditional and simple structured houses of a single storey. Most areas are hard-surfaced and have limited vegetation except those private amenity plantings.</p> <p>Given the traditional nature of much of this LR and its historical buildings, this LR is relatively intolerant to change and is considered to have medium sensitivity.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
12.5	Wa Shan Rural Development Area	Medium	Medium	Medium	Medium
<p>This LR refers to several rural development areas along the hillsides or at the foothill of Wa Shan. They are largely rural settlements including Sheung Shui Wa Shan village, Siu Hang Tsuen and Siu Hang San Tsuen. Most of these villages are undergoing transformation due to the fact that many houses have been replaced by modern housing blocks of 2-3 storeys and some new housing blocks are being constructed. This LR has limited softscape treatment but does include some trees (e.g. <i>Mangifera indica</i>, <i>Dimocarpus longan</i> and <i>Livistona chinensis</i>) and private amenity plantings (e.g. <i>Duranta erecta</i>).</p> <p>One temple is located in Siu Hang Tsuen, (Fuk Tak Temple), established some 100 years ago. The temple is for the worship of the Earth God and other gods/deities that give protection to the villagers and so is locally important. Although the temple has a ‘Nil Grade’ historic building value, it is at one end of the Lung Yeung Tau Heritage Trail. Part of San Wai/Tai Ling Firing Range is also included in this LR. It is a large piece of grassland for military purpose. Many mature trees grow in the surroundings, including <i>Macaranga tanarius</i>, <i>Celtis sinensis</i>, <i>Leucaena leucocephala</i> and <i>Eucalyptus</i> spp.</p> <p>This LR is largely a man-made area but some of the historical buildings and the vegetation associated with the firing range are relatively intolerant to change. The overall sensitivity of this LR is medium.</p>					
12.6	Lung Yeuk Tau Rural Development Area	Medium	Medium	Medium	Medium
<p>A group of villages aggregate in Lung Yeuk Tau, including Kan Lung Tsuen, San Wai, San Uk Tsuen, Wing Ning Wai, Wing Ning Tsuen, Tung Kok Wai, Ma Wat Wai, Ma Wat Tsuen and Lo Wai. These villages are largely divided into two parts (i.e. northern and southern parts) by Sha Tau Kok Road.</p> <p>Houses in Kan Lung Tsuen, San Wai and San Uk Tsuen in the north are relatively traditional and simple. The Sisters of the Precious Blood Children’s Village is also located in this area. There are facilities such as a playground and basketball pitch provided in this village.</p> <p>Wing Ning Wai, Wing Ning Tsuen, Tung Kok Wai, Ma Wat Wai, Ma Wat Tsuen and Lo Wai in the southern part of this LR are either modern villages with housing blocks of 2-3 storeys or villages undergoing transformation. However, some historical elements remain in these villages. These include the Entrance Gate of Wing Ning Wai and Tsung Kyam Church at Shung Him Tong Tsuen, both of which are classified as Grade 3 Historic Buildings, as well as the Entrance Tower of Ma Wat Wai and Entrance Tower and Enclosing Walls of Lo Wai, which are declared monuments. The whole village area is mostly hard-surfaced and has limited softscape treatment but does include some trees (e.g. <i>Dimocarpus longan</i>, <i>Sterculia lanceolata</i> and <i>Ficus microcarpa</i>) and some bamboos.</p> <p>The Lung Yeuk Tau Heritage Trail passes through this LR taking in the high number of heritage buildings in the LR. Although many village areas in this LR are relatively modern, the historic buildings and declared monument are vulnerable to change since they cannot be easily recreated and overall this LR has medium sensitivity.</p>					
12.7	Rural Development Area at Wo Hop Shek and Wong Kong Shan	Low	Low	High	Low
<p>This LR includes Cyber Domaine, Tong Hang, Tong Hang Tung Chuen (at the foothill of Lung Shan), part of the Wo Hop Shek San Tsuen in Wo Hop Shek, Kau Lung Hang San Wai and Yuen Leng. It also includes the Tong Hang Fresh Water Service Reservoir that is located on the hillside of Lung Shan. Trees commonly found in this LR are <i>Melaleuca quinquenervia</i>, <i>Celtis sinensis</i>, <i>Ficus hispida</i>, <i>Leucaena leucocephala</i>, <i>Dimocarpus longan</i>, and <i>Eucalyptus citriodora</i> This LR is dominated by domestic residencies. Its landscape amenity, significance and quality are moderate and it has a high ability to tolerate change, making its overall sensitivity low.</p>					
12.8	Rural Development Area at Ma Shi Po	Medium	Low	Medium	Medium
<p>This LR refers to the rural settlements scattered among the agricultural lands in Ma Shi Po. Most of the settlements are old in style and of small and simple structure. Trees associated with these village houses include <i>Celtis sinensis</i>, <i>Ficus hispida</i>, <i>Leucaena leucocephala</i> and <i>Dimocarpus longan</i> etc.</p> <p>This LR is dominated by domestic residencies. Its landscape amenity, significance and quality are medium and it has limited ability to tolerate change given the age of those old village houses and its relationship with the surrounding agricultural land, making its overall sensitivity medium.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
12.9	Wu Nga Lok Yeung and Ling Shan Tsuen Rural Development Area	Low	Low	High	Low
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR mainly refers to two patches of continuous rural development located at Wu Nga Lok Yeung as well as Ling Shan Tsuen and Good View New Village.</p> <p>Some of the construction works at Wu Nga Lok Yeung are suspended, leaving two rows of 3-storey unfinished village houses on exposed ground. Plants are generally absent from this area. The village houses in Ling Shan Tsuen and Good View New Village are relatively concentrated with large trees frequently found along the winding roads and in private gardens. These trees include <i>Celtis sinensis</i>, <i>Dimocarpus longan</i>, <i>Livistona chinensis</i> and <i>Macaranga tanarius</i>, etc.</p> <p>This LR is dominated by domestic residencies. Its landscape amenity, significance and quality are medium and it has high ability to tolerate change, making its overall sensitivity low.</p>					
12.11	Rural Development Area at Kiu Tau and Nam Wa Po	Medium	Medium	High / Medium	Medium
<p>This LR sits outside the works area and will not be affected.</p> <p>This LR mainly includes Kiu Tau and Nam Wa Po. 2 to 3 storeys modern village houses are commonly found. There is the oldest school building and a church more than a half century in the village. Most area has hard surface paving. Ornamental trees like <i>Ficus Benjamina</i>, <i>Schefflera heptaphylla</i> and <i>Plumeria acutifolia</i> and some private amenity plants can be easily seen. There is also fruit tree like <i>Carica papaya</i>.</p> <p><i>This LR is dominated by domestic residencies. Its landscape amenity, significance and quality are moderate and therefore the overall sensitivity of this LR is medium.</i></p>					
12.12	Rural Development Area in Long Valley, Yin Kong and Hak Ka Wai	Medium	High	Low	High
<p>This LR lies between Shek Sheung River and Fanling Highway to the southeast of Long Valley. It covers 4 villages: Yin Kong Village, Hak Ka Wai and Tsung Pak Long and Tai Tau Leng.</p> <p>Hak Ka Wai is a traditional village with around 100 years of history. It consists of two rows of residences, an ancestral hall (the Wong Shek Chung Ancestral Hall), a study hall, an entrance gate, enclosing walls and a watch tower. This village is proposed as a Grade 1 Historic Building but the status is not confirmed as of September 2010.</p> <p>Tsung Pak Long is a traditional village undergoing transformation. It contains ancestral halls, earth shrines, a school and a church in traditional style to its northwest. Most areas within this LR are hard-surfaced and have limited vegetation except those private amenity plantings, in which fruit trees <i>Dimocarpus longan</i>, <i>Carica papaya</i> and <i>Citrus reticulata</i> and landscaping shrub <i>Duranta erecta</i> and <i>Murraya paniculata</i> are commonly found.</p> <p>Tai Tau Leng is a traditional village undergoing transformation. It contains a village hall, a school, a factory, a basketball court and a football field to its northwest. Most areas within this LR are hard-surfaced and have limited vegetation. Green buffer trees are planted to its east and south along Po Shek Wu Road and Fanling Highway. The main species include <i>Bauhinia variegata</i>, <i>Acacia auriculiformis</i>, <i>Leucaena leucocephala</i>.</p> <p>The historic buildings located in this LR, particularly the Hak Ka Wai village, cannot be easily recreated and this LR is relatively intolerant to change. This LR has high sensitivity.</p>					
12.13	Rural Development Area to the North of Hong Kong Golf Club	Medium	Low	High	Low
<p>This LR mainly covers one modern village, Golf Park View, consisting of residential 4-5 storey blocks enclosed by walls.</p> <p>Overall this LR is considered to have low sensitivity.</p>					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLR 13 - Industrial / Open Storage					
Refers to areas which are heavily adapted for human industrial use, such as factory facilities, waste processing plants and other industrial buildings, often with some open areas for storage, parking or other associated activities. These areas have small roads within them and some concrete drainage channels. There is very little existing vegetation within this LR.					
Within the Study Area, this LR is geographically divided into Sheung Shui and Fanling industrial/open storage areas and will be further described individually.					
13.1	Sheung Shui Industrial/Open Storage Area	Low	Low	High	Low
The western part of this LR contains Shek Wu Hui Sewage Treatment Works and several warehouses and industrial buildings. Planted trees are found along the roads and dominant species include <i>Acacia auriculiformis</i> , <i>Acacia confusa</i> and <i>Leucaena leucocephala</i> .					
The rest of this LR is largely used for open storage and car parks as well as several waste processing plants but there is one recognized Tin Hau Temple (No. 41 Hung Kiu San Tsuen), but this has a ‘Nil Grade’ historic building value. Trees within this area are not actively managed and grasses occupy many places between the car parks. Tree species commonly found include <i>Leucaena leucocephala</i> , <i>Bauhinia blakeana</i> , <i>Bauhinia variegata</i> , <i>Macaranga tanarius</i> , <i>Delonix regia</i> , <i>Cassia siamea</i> , <i>Bombax ceiba</i> , <i>Syzygium jambos</i> , <i>Ficus virens</i> , <i>Mangifera indica</i> and <i>Acacia auriculiformis</i> .					
This LR has relatively low landscape amenity value and consists mostly of modern man-made structures that can be easily recreated. Its sensitivity is considered to be low .					
13.2	Fanling Industrial Area	Low	Low	High	Low
This LR refers to the warehouses and industrial buildings, factories and workshops southwest of Luen Wo Hui in Fanling District. There are individual fenced factories containing some open areas for car parks with small patches of wild grasses or small shrubs growing on exposed ground. Trees grow sparsely along the roads between building blocks and include <i>Celtis sinensis</i> , <i>Hibiscus tiliaceus</i> , <i>Aleurites moluccana</i> and <i>Leucaena leucocephala</i> .					
This LR has low amenity value and is capable of accommodating change. It is considered to have low sensitivity.					
13.3	Industrial / Open Storage Area in Nam Wa Po	Low	Low	High	Low
This LR sits outside the works area and will not be affected.					
This is an isolated plot beside Nam Wa Po Tsuen and is now used for open storage. Trees in this LR include <i>Acacia confusa</i> , <i>Leucaena leucocephala</i> . <i>Delonix regia</i> .					
This LR predominantly consists of man-made structures which have a high capacity to tolerate change and have low landscape value. This LR is considered to have low sensitivity.					
FLR 14 - Major Transportation Corridor					
Refers to MTRC railway, Fanling Highway, as well as Sha Tau Kok Road (Lung Yeuk Tau) and all the associated intersections. There is tree planting along the sides of the roads consisting of a variety of indigenous and exotic species such <i>Cassia siamea</i> and <i>Acacia confusa</i> . In addition, there is some planting along the central divider (median) in some sections, including of amenity shrubs such as <i>Allamanda schottii</i> and sometimes palm trees <i>Livistona chinensis</i> .					
Drainage channels associated with the roads/highway are considered part of this LR as they are an integral function of the roadscape.					
14.1	MTRC East Rail	Low	Low	High	Low
The LR includes a short section of MTRC East Railway running between Sheung Shui and Lo Wu Stations. No significant planting is found along the railway lines and trees growing randomly in its vicinity are dominated by <i>Leucaena leucocephala</i> .					
This resource is highly utilized by the general public and well linked but it is man-made with low landscape value and a high ability to accommodate change. Its sensitivity is low .					
14.2	Sha Tau Kok Road (Lung Yeuk Tau)	Medium	Low	Medium	Medium
Sha Tau Kok Road (Lung Yeuk Tau) starts from Sheung Shui Police Station and runs northwest through the south of Luen Wo Hui in the FLN NDA Study Area. There is significant roadside planting, with planted trees dominated by <i>Melaleuca quinquenervia</i> found along the road sides and the central divider. In addition to trees, amenity shrubs such as <i>Ixora chinensis</i> and <i>Schefflera arboricola</i> are also planted to enhance to landscape value of this area.					
Despite this being a man-made resource, the landscape value of this LR is increased by the significant roadside planting with many mature roadside trees and overall its sensitivity is considered to be medium .					

Id. No.	Landscape Resource (LR)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
14.3	Fanling Highway	Medium	Low	Medium	Medium
This LR is a major transportation corridor connecting Fanling, Sheung Shui, Kwu Tung and other adjacent areas. It includes a short section of Fanling Highway with a reasonable amount of roadside planting with some mature tree. Species include <i>Melaleuca quinquenervia</i> , <i>Bombax ceiba</i> , <i>Ficus microcarpa</i> , <i>Casuarina equisetifolia</i> , <i>Acacia confusa</i> and <i>Bauhinia blakeana</i> . This is a man-made resource, and due to the roadside planting is less able to accommodate change and its overall sensitivity is considered to be medium .					
14.4	MTRC near Fanling Highway	Low	Low	High	Low
This LR is small section of the MTRC East Rail line running parallel to Fanling Highway. It has no planting associated with it, only noise barriers at its edges. This is a man-made resource which has a high ability to accommodate change. Its overall sensitivity is considered to be low .					
FLR 15 - Columbarium Refers to Columbarium in Wo Hop Shek. Built form is scattered throughout the woodland area consisting of a variety of indigenous (<i>Celtis sinensis</i> , <i>Macaranga tanarius</i> , <i>Ficus hispida</i> , <i>Ficus microcarpa</i> and <i>Litsea glutinosa</i>) and exotic species (<i>Acacia confusa</i> , <i>Eucalyptus</i> spp., <i>Dimocarpus longan</i> , <i>Melia azedarach</i> and <i>Syzygium jambos</i>).					
15.1	Wo Hop Shek Columbarium	Medium	Medium	Low	Medium
This LR sits outside the works area and will not be affected. This LR refers to the columbarium in Wo Hop Shek. It sits inside the natural woodland area. Trees include indigenous (<i>Celtis sinensis</i> , <i>Macaranga tanarius</i> , <i>Ficus hispida</i> , <i>Ficus microcarpa</i> and <i>Litsea glutinosa</i>) and exotic species (<i>Acacia confusa</i> , <i>Eucalyptus</i> spp., <i>Dimocarpus longan</i> , <i>Melia azedarach</i> and <i>Syzygium jambos</i>).					
The quality and landscape value of this LR is relatively high, with little tolerance to change and its sensitivity is considered to be medium .					

Table 12D.3.2 Landscape Character Areas and their Sensitivity – DP 8, 9, 10 and 12

Id. No.	Landscape Character Area (LCA)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLCA-1	Natural Hillside Landscape	High	High	Low	High
Refers to large hillside areas which are dominated by shrubland, grassland and some woodland in places such as the ravines. Within the Study Area for DPs this LCA encompasses Cham Shan and Wa Shan to the north reaching 164 mPD and the foothills of Lung Shan to the south. Other areas of this LCA found within the study area are at Wong Kong Shan, Stable Hill (Wu Tip Shan), and Ling Hill. They are relatively at lower height and close to human activities. This LCA is predominantly natural and of high quality. It is a significant LCA within the Study Area and has a low tolerance to change. Therefore its sensitivity is considered to be high .					
FLCA-2	Rural and Urban Peripheral Village Landscape	Medium	Medium	Medium	Medium
Refers to rural village areas and village areas on the fringes of urban developments, including relic landscapes of former villages. This LCA is dominated by small or medium sized villages with modern and traditional houses and some temples, interspersed with small agricultural plots and comprises a broad mixture of other land uses including water ponds, schools, sports grounds, and playgrounds, some open storage areas and car parks. This LCA also has some patches of woodland as well as vegetation associated with the villages and park areas. Within the Study Area for DPs this LCA is generally found at the foothills of the Cham Shan and Wa Shan to the east and some lowland areas to the southwest, such as Sheung Shui Wai, Tai Tau Leng, Tsung Pak Long, North District Hospital and Hong Kong Golf Club. This LCA is considered to have medium tolerance to change and be of moderate amenity value. Its sensitivity is therefore medium .					

Id. No.	Landscape Character Area (LCA)	Quality & Maturity (High /Medium /Low)	Rarity (High /Medium /Low)	Ability to Accommodate Change (High /Medium /Low)	Sensitivity (High /Medium /Low)
FLCA-3	Urban Development Landscape	Low	Low	Hlgh	Low
<p>Refers to urban areas with significant numbers of high-rise developments and extensive transport infrastructure. It also contains car parks and open areas associated with urban development such as playgrounds and small parks and sitting out areas. This LCA has limited natural vegetation but does include some man-made landscaping.</p> <p>Within the Study Area for FLN NDA this LCA is found only towards the south-western boundary including Sheung Shui and Fanling town centres, with buildings becoming more modern. It includes the high-rise developments such as Woodland Crest, Grand Regentville, Regentville, and Avon Park and some high rise estates such as Tin Ping Estate.</p> <p>This is an important residential landscape and has high tolerance to change. The sensitivity of this LCA is considered to be low.</p>					
FLCA-4	Industrial Landscape	Low	Low	High	Low
<p>Refers to areas comprising a broad mix of land uses including factories, utility facilities, workshops, open storage and some channelized water courses. It is normally located on low lying ground or at the base of hills and may include small and fragmented areas of residential houses and their associated agricultural land. There is little significant vegetation among this built environment, but small patches of vegetation do exist, particularly along the channelized river.</p> <p>Within the Study Area for DPs this LCA is mainly comprised of vacant land and open storage such as that found along Sha Tau Kok Road near Ng Tung River, Sheung Shui Industrial and Fanling Industrial Area. Some open storage uses are also found near some villages, such as Lung Yeuk Tau and Kiu Tau.</p> <p>This LCA contains man-made facilities that are able to accommodate change, particularly if they have been abandoned. Except for the significant planting along the Ng Tung River, most areas in this LCA are exposed with the vegetation largely removed, resulting in a low landscape amenity. Therefore, the sensitivity of this LCA is considered to be low.</p>					
FLCA-5	Lowland Agricultural Landscape	Medium	Medium	Medium	Medium
<p>Refers to large areas dominated by agricultural land (active and abandoned) with scattered small villages and low-rise buildings and may also include some fishponds and irrigation ponds. This LCA is mostly found among lowlands and floodplain areas.</p> <p>Within the Study Area for DPs the key area of this LCA is found at Tin Ping Shan Valley and Ma Shi Po. Tin Ping Shan Valley is located in the valley between Ng Tung River and Wa Shan. Around the promontory of Wa Shan past Sacred Hill are abandoned agricultural fields and drained concrete fishponds. The remaining area is active agriculture and contains Wu Nga Lok Yeung village. Ma Shi Po agricultural land is in the lowland area located to the east of Wu Nga Lok Yeung. It is primarily agricultural land with a mixed use of villages and light industry amongst manmade woodland and nursery. The fragmented greenery pattern extends from the north to the south side of the Ng Tung River.</p> <p>The value and significance of the LCA is high with the much of the agricultural land having been established for a number of years in this the FLN NDA Study Area. This LCA can accommodate limited change and its overall sensitivity is considered to be high.</p>					
FLCA-6	Major Transportation Corridor Landscape	Low	Low	High	Low
<p>Refers to major highway and railway areas, with their scattered associated buildings.</p> <p>Within the Study Area for DPs, Fanling Highway, Sha Tau Kok Road and MTRC East Railway are major transport routes stretching in a variety of directions and located at the west and south boundaries of the Study Area, connecting the FLN NDA with other adjacent areas.</p> <p>The LCA is considered to be highly tolerant to change and its sensitivity is low.</p>					
FLCA-7	Major Water Course Corridor Landscape	Medium	Medium	Medium	Medium
<p>Refers to modified water courses channelized with concrete or grasscrete and also includes some walkways along the water course and the vegetation associated with the water course, both within the channel and along the banks as well as in the ridge of the banks.</p> <p>Within the Study Area of DPs this LCA includes sections of Ng Tung River, Shek Sheung River and Ma Wat River.</p> <p>The landscape amenity and significance of this LCA are medium. Due to its largely man-made state, it is reasonably tolerant to change and its sensitivity is considered to be medium.</p>					

12D.3.1 Summary of Baseline Conditions

The LR within the Study Area which have been identified for their higher sensitivity are generally natural streams, woodland, marsh/ wetland, some water ponds, although other resources may also have high sensitivity due to certain characteristics.

LRs associated with natural water bodies are often considered higher value resources. With the exception of a natural stream at Tin Ping Shan Agricultural Land (FLR-2.1) which much of it passes through development areas and is degraded by pollution while some sections of the stream are fortified by concrete banks and a natural stream at Cham Shan (FLR-2.2), which has banks partially paved in places and low water quality (commonly polluted with rubbish). The natural streams in FLN (in Lung Shan (FLR-2.3), Siu Hang San Tsuen (FLR-2.4) and Kau Lung Hang, Yuen Leng and Nam Wa Po (FLR-2.5)) all have high sensitivity, largely due to their intactness and low ability to accommodate change. Pond areas which are no longer used or actively managed in the area consist of ponds at Fu Tei Au (FLR-3.3), within the eastern rural area (FLR-3.4), at Wai Loi Tsuen (FLR-3.5) and Nam Wa Po (FLR-3.6); all of these ponds are noted as having medium sensitivity. In addition, the mitigation wetland along Ng Tung River (FLR-4.2), is rated as highly sensitive largely due to their rarity within a developed landscape setting, natural characteristics and sensitivity to change.

Trees are considered as a precious LR therefore, all areas of hillside woodland within the Study Area are rated as having high sensitivity. These include Sheung Shui Water Treatment Works Hillside Woodland (FLR-6.1), Cham Shan and Wa Shan Hillside Woodland (FLR-6.2), Ma Wat Wai Hillside Woodland (FLR-6.3) and Hillside Woodland at Lung Shan and Wa Mei Shan (FLR-6.4). Unlike woodland within KTN, the lowland woodland around FLN is generally of low to medium quality as a result of human disturbance. The lowland woodland at Sacred Hill (FLR-7.4) and at Ling Hill/Ling Shan Tsuen (FLR-7.5) are considered to have high sensitivity as they are of better quality, more pristine and therefore less able to accommodate change. There are no OVTs in this area but one area of plantation (at Ha Pak Tsuen (FLR-5.2) is considered to have high sensitivity as a result of its maturity, number of mature tree specimens within a traditional village setting, giving it a low ability to accommodate change.

FLR8 Shrubland/Grassland Mosaic surrounds the study area such around Fu Tei Au (FLR-8.2), Cham Shan and Wa Shan (FLR-8.3). It is also commonly associated with hillsides and local prominences such as Lung Shan (FLR 8.4). These LR are generally located on undeveloped areas of natural topography however they are managed using periodic fires, therefore their overall sensitivity is considered to be medium. Areas of shrubland/grassland mosaic located close to Sheung Shui STW at Fu Tei Au (FLR8.2) is established on a man-made landscape feature (artificial watercourse channel) therefore the sensitivity is considered to be low.

All agricultural LRs within the study boundary for the schedule 2 DPs have been attributed with medium sensitivity as a result of generally medium quality and that it is relatively easy to re-create in the right environment and not overly rare in the New Territories.

With regards to LCAs, Natural Hillside Landscape in FLN NDA (FLCA-1) is considered highly sensitive, largely due to its high landscape quality and inability to accommodate change. Rural and Urban Peripheral Village Landscape (FLCA-2) and Major Water Course Corridor Landscape (FLCA-7) have medium sensitivity, largely due to their moderate amenity value and medium tolerance to change. The Lowland Agricultural Landscape in this area (FLCA-5) is predominantly of medium value and considered reasonably easy to recreate given the right environment, and therefore also has medium sensitivity. The Major Transport Corridor Landscape in this area (FLCA-6) includes the southern Fanling Highway and part of the MTRC East Rail Line. Unlike in the KTN area, there is limited planting within this LCA within the Study Area so it has a high ability to accommodate change and therefore this LCA has low sensitivity. Urban Development Landscape (FLCA-3) and Industrial Landscape (FLCA-4) also have low sensitivity due to their low landscape quality through human development and high ability to accommodate change.

12D.4 Details of Site Formation Impacts – FLN Schedule 2 DPs 8, 9, 10 and 12

The proposed DPs relate to the provision of new road infrastructure together with improvements to existing road and reprovision of a temporary wholesale market. A summary of the likely site formation impact for each DP is provided below:

12D.4.1 DP 8 - Po Shek Wu Interchange Improvement

A flyover along the southbound direction of Po Shek Wu Road will be constructed from south of Po Wan Road to westbound Fanling Highway. This flyover is responsible for diverting the traffic from southbound Po Shek Wu Road to westbound Fanling Highway from Po Shek Wu Interchange. This will involve the construction of a new northbound lane at the west side of Po Shek Wu Road (section between Po Wan Road and San Wan Road). In this case the proposed slip road will be elevated above the existing Po Shek Wu Road, at a level of +20mPD (i.e. road infrastructure has been stacked to reduce the overall footprint and accommodated the improvement works within the existing constraints). The existing northbound and southbound lanes would then be realigned to the west side. This provides the space for the construction of the foundation and pile cap of the piers of the bridge at the east side of Po Shek Wu Road. The existing slope on the eastern side of Po Shek Wu Road would be maintained.

The majority of the road falling within the improvement works will be contained within a new fully enclosed system of 6m high noise barriers.

12D.4.2 DP 9 and 10 - Fanling Bypass, East and West Sections

The proposed Fanling Bypass Western Section serves as a district distributor road with 2 lanes with an average carriageway width of 7.3m. The alignment will require site clearance, tree felling, demolition and cut and fill works throughout the works area to form the road. This section of the Fanling Bypass will be constructed at-grade along its entire route. A short section of 3m high noise barriers will be constructed at the western end of the scheme close to Man Kam To Road. On the north side of the road in the same location a 150m section of 5m high vertical barrier will be constructed. In addition 2no pedestrian footbridges are proposed.

The proposed Fanling Bypass Eastern Section acts as a primary distributor road with dual lanes with a carriageway width of 14.6m. The dual carriageway includes a central reservation. Initially the road is constructed at-grade before it crosses Ng Tung River, after this crossing the road returns to at-grade level and progressively drops to form an underpass beneath Sha Tau Kok Road. Beyond the underpass, as the road travels further south it becomes elevated and remains on viaduct along the remaining alignment until it joins with the existing Fanling Highway. The construction works for this section are far more extensive and will include site clearance, tree felling, demolition and cut and fill works throughout the works area to form the road. Major excavation works will be required to form the underpass at Sha Tau Kok Road. In addition, the realigned Ma Wat River channel will be required to the west of Wing Ning Tsuen. Numerous pedestrian footbridges are proposed along the route at key crossing points. Noise barriers are proposed along the majority of the route.

12D.4.3 DP12 Reprovision of wholesale market in FLN NDA.

As a result of the alignment of the Fanling Bypass Eastern Section where passes through the existing wholesale market site off On Kui Street, Reprovision of the site is proposed in the same location although it will be re-orientated to run parallel to the road alignment and partially occupy the adjacent land plot occupied by the water supplies department. Breaking out of existing surfaces, vegetation clearance, demolition of temporary structures and formation of new surfaces would be required.

12D.5 Sources of Impacts

During the construction of the various components of DPs 8, 9, 10 and 12, potential landscape and visual impacts will generally result from the following:

- Site clearance including demolition of structures and tree removal/transplantation would have a negative landscape and visual

impact due the appearance of construction activities and loss of vegetation cover. Demolition of unsightly or temporary structures may generate positive impacts.

- Site formation works including cutting and filling e.g. of farmland, streams would generate negative impacts as a result of the loss of these features of high landscape value.
- Stockpiling of construction and demolition materials, including existing topsoil, storage of construction equipment and mechanical plant would generate negative visual impact as a result of these operations intruding into existing views.
- Construction of at-grade and above ground facilities including, bridges, viaducts, interchanges, roads and noise barriers are likely to generate negative visual impacts as a result of these operations intruding into existing views and the scale of the construction footprint.
- Temporary structures within the Project Site including site offices, boundary fencing/hoarding and parking areas would generate negative visual impact due to generally low aesthetical value of these types of structures.
- Re-alignment of roads would generate negative visual impacts due to the visibility of construction operations and the likely large scale construction footprint.
- Re-alignment of streams and watercourses would generate negative visual impacts due to the loss of visual amenity provided by these resources
- Alteration to natural terrain would generate negative landscape and visual impact as a result of the appearance of major earth works, construction movements, loss of visual amenity and likely large scale construction footprint.

During the operation phase, potential impacts will result from the following:

- Operation of new roads including intersections and viaducts would generate negative visual impacts due to the potential obstruction of existing views visibility of new structures, and traffic movements.
- Provisions of noise mitigation structures are likely to generate some negative visual impacts due to the appearance of new built form and potential to obstruct existing views. This may be balanced where the barriers may provide screening from visual detractors.
- Residual impacts from loss of trees and vegetation during the construction phase would generate negative landscape and visual impacts in the short term until compensation planting has established and replaced these resources.

12D.6 Landscape Impact Assessment

The landscape impact assessment has been carried out taking into consideration the baseline LRs and LCAs described in **Section 12D.3** and potential impacts described in **Sections 12D.4 and 12D.5**.

Further details of the potential landscape impacts are provided for each DP below. The magnitude of change for LRs and LCAs is presented in **Tables 12D.6.1 and 12D.6.2** below.

Landscape impacts are presented on Figures 12.52.23 and 12.52.41 to 50.

Table 12D.6.1 - Magnitude of Change on LR_s (DP₈, 9, 10, 12)
Note - For LR_s where no impact is recorded, these are not shown.

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
KLR 1 Channelized Water Course												
1.1	Ng Tung River (Fanling District)	DP 9: Fanling Bypass Western Section DP 10: Fanling Bypass Eastern Section	Study Area: 40.68ha/ 3.60km DP Boundary: 9.82ha/ 2.6km	Medium	Poor	Fair	Temporary Medium	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation.</u> The majority of DP9 sits within this LR as it runs parallel to the river channel. The upper embankment of the river comprises a road access track which will generally not be affected. The road is lined with mature and semi-mature trees, a small proportion of which will require felling in localized areas where junction points are formed with bridges crossing the river (outside the scope of the schedule 2 DPs). Where the road formation becomes closer to the channel as it approach the proposed junction with DP10, earthworks to bring levels up may impact on intervening vegetation between the road alignment and the channel. The river banks and bed of the river would not be affected, only the surface beyond the banks. DP10 will have a larger impact on this resource as the road alignment is wider and runs closer to the channel edge therefore a larger proportion of the tree planting lining the access road will require felling. The alignment then crosses the river channel. Bridge construction works are likely to require large scale excavations to form abutments beyond the river banks. As a result of the partial loss of tree cover along the river alignment, the compatibility of the work during construction is considered to be poor. Taking into account the heavily engineered nature of the channelized river course and the realigned channel profile the compatibility during operation would be fair. The majority of this resource will remain intact throughout the construction and operation stage therefore the overall magnitude of change is considered to be small.										
1.2	Shek Sheung River	DP8: Po Shek Wu Interchange Improvement	Study Area: 4.30ha/633m DP Boundary: 0.18ha/63m	Small	Good	Good	Temporary Short	Permanent	Reversible	Irreversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation.</u> A very small part of DP 8 will affect an area of existing hardstanding, due to the very small scale and previous developed nature, the compatibility is considered to be good in construction and operation. The DP will have a very limited impact on this LR, therefore the magnitude of change is considered to be negligible in construction and operation.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
1.4	Ma Wat River	DP 10: Fanling Bypass Eastern Section DP 12: Reprovision of Wholesale Market	Study Area: 25.84ha / 5.5km DP Boundary 12.30ha/ 4.4km	Large	Poor	Fair	Temporary Medium	Permanent	Reversible	Irreversible	Large	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> DP10 runs parallel to this LR and crosses the channel at several locations. Trees located on the upper bank of the river will require felling at the crossing points and where the road runs close to the top of the channel. As the alignment runs to the west of Wing Ning Tsuen, a major realignment of the channel is proposed, pushing it further to the east. This will require significant excavation works and filling of the old channel. As a result of the localised loss of vegetation and channel realignment works, the compatibility in construction is considered to be poor. Taking into account the heavily engineered nature of the channelized river course and the realigned channel profile the compatibility during operation would be fair. DP12 will be realigned to fit the new road and channel alignment, the principal influence on the LR comes from DP10. The majority of this resource will remain intact throughout the construction and operation stage however the associated earthworks and bypass construction are large scheme, therefore the magnitude of change during construction is considered to be large. As the subsequent development will replace the river channel with an identical channel albeit on a different alignment and with the reduce scale of the construction area, the magnitude of change is operation would be intermediate. The main difference being the alignment of the new bypass.										
KLR 2 Water Course												
2.4	Natural Streams at Siu Hang San Tsuen	DP 10: Fanling Bypass Eastern Section	Study Area: 1.13km DP Boundary: 160m	Medium	Poor	Fair	Temporary Short Term	Permanent	Reversible	Reversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> The downstream area of the stream at Siu Hang San Tsuen falls within the footprint of the DP and will be affected by the site designated for the Fanling Bypass Eastern Section. Fanling Bypass will be an elevated viaduct over the section close to the stream and should avoid directly impacting it and causing any loss of the stream. It is expected that the intensity of sunlight that can reach the stream area will be reduce by the viaduct and as a result the growing conditions of riparian plants and the landscape quality provided by such riparian plants, will be reduced. In construction, the works will occur over the stream and therefore the compatibility would be poor. In operation the works would not directly impact the stream although would cross the LR on viaduct, in this case the compatibility would be fair. Overall, the magnitude of change during construction and operation would be small due to the lack of direct impact on the stream.										
FLR 4 Marsh / Wetland												
4.2	Mitigation Wetland	DP 9: Fanling Bypass Western Section	Study Area: 5.53ha DP Boundary: 1.59ha	Medium	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> There are five main mitigation wetland areas located along Ng Tung River within the DP boundary. The proposed DP will cut across two of the wetlands on the northern side of Ng Tung River; road formation will require partial filling and permanent loss off the resource where affected. As these works will involve the partial loss of this resource, the compatibility is considered to be poor in construction and operation. The majority of the impact would be as a result of the Schedule 3 development, in the case the magnitude of change is considered to be intermediate in construction and operation.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR 6	Hillside Woodland											
6.2	Cham Shan and Wa Shan Hillside Woodlands	DP 9: Fanling Bypass Western Section DP 10: Fanling Bypass Eastern Section	Study Area: 62.25ha DP Boundary 1.52ha	Small	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> Part of this LR along the northern bank of Ng Tung River will be adversely affected by the Fanling Bypass construction work. Trees are likely to be removed during site clearance and formation and the land use will be permanently changed. Considering a small area will be affected, the magnitude of impact is considered to be small.										
6.4	Hillside Woodlands at Lung Shan and Wa Mei Shan	DP 10: Fanling Bypass Eastern Section	Study Area: 23.28ha DP Boundary: 1.50ha	Small	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> Construction impacts will relate to tree felling and cut and fill works within this LR at the west of the DP. As this relates to relatively large area and will require permanent loss to the LR, the compatibility in construction and operation is considered to be poor. Due to permanent loss but small scale of works, the magnitude of change is considered to be Intermediate during construction and operation.										
FLR 7	Lowland Woodland											
7.3	Hung Kiu San Tsuen Lowland Woodland	DP 9: Fanling Bypass Western Section	Study Area: 5.2ha DP Boundary: 0.46	Small	Poor	Poor	Permanent	Permanent	Irreversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> A small area of this LR will fall within the boundary of DP, construction impacts will require tree clearance, cut and fill works to allow roundabout construction, provision of pedestrian footbridge and road formation. Due to permanent loss of resource the compatibility during construction and operation is considered to be poor. Only a very small area of this LR falls within the DP. Woodland here will be cleared prior to site formation. Since the area affected is so small, less than 9% of the LR area and taking into account the poor compatibility, the overall magnitude of change is considered to be small during construction and operation.										
7.7	Lowland Woodland near Tai Tau Leng	DP8: Po Shek Wu Interchange Improvement	Study Area: 1.25ha DP Boundary: 0.57	Small	Poor	Poor	Temporary Short	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> A small area of this LR will fall within the boundary of DP, construction impacts will require tree clearance, cut and fill works to allow road construction. Due to permanent loss of resource the compatibility during construction and operation is considered to be poor. As around 45% of the LR will be permanently changed, the magnitude of change is considered to be intermediate in construction and operation.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLR 8	Shrubland / Grassland Mosaic											
8.3	Shrubland/Grassland Mosaic at Cham Shan and Wa Shan	DP 9: Fanling Bypass Western Section DP 10: Fanling Bypass Eastern Section	Study Area: 85.81ha DP Boundary 0.65ha	Small	Poor	Poor	Temporary Short	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> A very small area of this LR will be used for the construction of the proposed DP and natural vegetation will be lost during construction, cut and fill works will also be required. The works will require permanent change to the LR therefore compatibility in construction and operation is considered to be poor. As a result of the small scale of the area which forms part of a more extensive area of the LR, the magnitude of change is considered to be small in construction and operation.										
FLR 9	Agricultural Land											
9.2	Fu Tei Au Agricultural Land	DP 9: Fanling Bypass Western Section	Study Area: 3.61ha DP Boundary: 0.06	Small	Poor	Poor	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> A small area of farmland falls within the boundary of the proposed DP, vegetation clearance and filling works will be required. As the work would involve loss of the LR the compatibility is considered to be poor during construction and operation. Due to the very small scale of the intrusion of these works into the LR, the magnitude of change is considered to be small during construction and negligible in operation. The majority of the impact would be as a result of the Schedule 3 works.										
9.5	Agricultural Land at Sheung Shui Wa Shan	DP 9: Fanling Bypass Western Section	Study Area: 8.47ha DP Boundary: 2.28	Medium	Poor	Poor	Temporary Medium	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> Under half of this LR falls within the wider RODP boundary but this small area is affected by roads The agricultural land will be lost during site clearance and site formation here, and by operation this area of LR will be converted to incompatible land uses, therefore compatibility during construction and operation is considered to be poor. Given the relatively small area however and absence of many trees on agricultural land, overall the magnitude of change is considered intermediate during construction and operation..										
9.6	Agricultural Land in Wu Nga Lok Yueng, Siu Hang San Tsuen, Siu Hang Tsuen and Lung Yeuk Tau	DP 9: Fanling Bypass Western Section DP 10: Fanling Bypass Eastern Section	Study Area: 36.76ha DP Boundary: 5.45	Medium	Poor	Poor	Temporary Medium	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> A large area of this LR will be affected by road construction works which will involve vegetation clearance, cut and fill works. As the work would involve loss of the LR the compatibility is considered to be poor during construction and operation. Due to the scale of the works and permanent loss of the LR, the magnitude of change is considered to be intermediate in construction and operation as the works only affect a relatively small area of the LR. The wider Schedule 3 works would have a more significant impact on this LR.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
9.7	Agricultural Land South of Sha Tau Kok Road	DP 10: Fanling Bypass Eastern Section	Study Area: 8.95ha DP Boundary: 1.52	Large	Poor	Poor	Temporary Medium	Permanent	Irreversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> An area of this LR will be affected by road construction works which will involve vegetation clearance, cut and fill works. As the work would involve loss of the LR the compatibility is considered to be poor during construction and operation. Due to the scale of the works and permanent loss of the LR, the magnitude of change is considered to be intermediate in construction and operation.										
FLR 11 Urban Development Area												
11.2	Sheung Shui Urban Development Area	DP8: Po Shek Wu Interchange Improvement	Study Area: 110ha DP Boundary: 1.2ha	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> A small area of this LR falls within the works area for DP however the majority of the LR relates to the existing roadscape. Whilst the construction works would cause some disruption to the LR, in operation this area would remain as a road. In this case the compatibility is considered to be good in both construction and operation. As a result of the very small area affected and overall good compatibly of the DP with the LR, the magnitude of change is considered to be Small during construction and negligible in operation.										
11.3	Fanling Urban Development Area	DP 10: Fanling Bypass Eastern Section	Study Area: 57.21ha DP Boundary: 0.27ha	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> A small area of this LR falls within the works area for DP 10 close to Ma Sik Road. Whilst the construction works would cause some disruption to the LR, in operation this area would remain as a road. In this case the compatibility is considered to be good in both construction and operation. As a result of the very small area affected and overall good compatibly of the DP with the LR, the magnitude of change is considered to be Small during construction and negligible in operation.										
FLR 12 Rural Development Area												
12.5	Wa Shan Rural Development Area	DP 9: Fanling Bypass Western Section DP 10: Fanling Bypass Eastern Section	Study Area: 22.65ha DP Boundary: 1.59ha	Medium	Poor	Fair	Temporary Short	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The proposed DPs will pass through the edge of this resource north of Ng Tung River. Construction impacts will result in the demolition of structures, clearance of vegetation and trees. Cut and fill works will be required to achieve the correct road levels throughout the area. The roads will required partial loss of this resource therefore the compatibility is considered to be poor during construction and operation. As a result of the overall scale of the impacted area, it is considered that the magnitude of change will be small during construction. As these are previously developed areas, it is considered the magnitude of change would drop to negligible during the operation stage.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
12.6	Lung Yeuk Tau Rural Development Area	DP 10: Fanling Bypass Eastern Section	Study Area: 54.07ha DP Boundary: 1.26	Small	Fair	Fair	Temporary Short	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The proposed DP will pass through this resource east of Ma Wat River. Construction impacts will result in the demolition of structures and buildings together with clearance of vegetation and trees. Cut and fill works will be required to achieve the correct road levels for construction of a viaduct through the area. The roads will require a partial loss of this resource therefore the compatibility is considered to be poor during construction and operation. As a result of the overall scale of the impacted area, it is considered that the magnitude of change will be small during construction. As these are previously developed areas, it is considered the magnitude of change would drop to negligible during the operation stage.										
12.7	Rural Development Area at Wo Hop Shek and Wong Kong Shan	DP 10: Fanling Bypass Eastern Section	1.40	Small	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The proposed DP will pass through the northern extent of the resource as it meets the Fanling Highway. Construction impacts will result in the demolition of structures and buildings together with clearance of vegetation and trees. Cut and fill works will be required to achieve the correct road levels and reconfiguration of existing road junction. The DP will require a partial loss of this resource within a previously developed area therefore the compatibility is considered to be fair in construction and operation. As a result of the overall scale of the impacted area, it is considered that the magnitude of change will be small during construction. As these are previously developed areas, it is considered the magnitude of change would drop to negligible during the operation stage.										
12.8	Rural Development Area at Ma Shi Po	DP 10: Fanling Bypass Eastern Section	Study Area: 12.72 DP Boundary: 0.13	Small	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Negligible
		Construction impacts will result in the demolition of structures and buildings together with clearance of vegetation and trees. Cut and fill works will be required to achieve the correct road levels and reconfiguration of existing road junction. The DP will require a partial loss of this resource within a previously developed area therefore the compatibility is considered to be fair in construction and operation. As a result of the overall scale of the impacted area, it is considered that the magnitude of change will be small during construction. As these are previously developed areas, it is considered the magnitude of change would drop to negligible during the operation stage.										
12.12	Rural Development Area in Long Valley, Yin Kong and Hak Ka Wai	DP 8: Po Shek Wu Interchange Improvement	Study Area 10.6ha DP Boundary: 0.78	Small	Fair	Fair	Temporary Short	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The works area for the proposed DP will require some vegetation clearance to allow road construction within this LR. The DP will require only a very small loss of this resource within a previously developed area therefore the compatibility is considered to be fair during construction and operation. As a result of the overall scale of the impacted area, it is considered that the magnitude of change will be small during construction. As these are previously developed areas, it is considered the magnitude of change would drop to negligible during the operation stage.										

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
12.13 (KLR-12.5)	Rural Development Area to the North of Hong Kong Golf Club	DP 8: Po Shek Wu Interchange Improvement	Study area: 5.3ha DP boundary: 0.06ha	Small	Fair	Fair	Temporary Short	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The works area for the proposed DP will require some vegetation clearance to allow road construction within this LR. The DP will require a partial loss of this resource within a previously developed area therefore the compatibility is considered to be fair during construction and operation. As a result of the overall scale of the impacted area, it is considered that the magnitude of change will be small during construction. As these are previously developed areas, it is considered the magnitude of change would drop to negligible during the operation stage.										
FLR 13 Industrial / Open Storage												
13.1	Sheung Shui Industrial/ Open Storage Area	DP8: Po Shek Wu Interchange Improvements DP 9: Fanling Bypass Western Section	Study Area: 70.03ha DP Boundary 4.02	Medium	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Intermediate	Small
		<u>Description of Key Impacts during Construction and Operation</u> DPs8 and 9 will both pass through this resource. Construction impacts will result in the demolition of structures and buildings, clearance of vegetation and trees. Cut and fill works will be required to achieve the correct road levels throughout the area. Given the extensive clearance, formation of hard surfaces and temporary structures existing in these areas, it is considered the compatibility of the roads during construction and operation would be fair. As a result of the overall large scale of the impacted area, it is considered that the magnitude of change will be intermediate during construction and small operation, as a result of the fair compatibility.										
13.2	Fanling Industrial Area	DP 9: Fanling Bypass Western Section DP 12: Reprovision of Wholesale Market	Study Area: 16.02 3.17	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> DPs9 and 12 will both affect this resource. Construction impacts will result in the demolition of structures and buildings, clearance of vegetation and trees. Cut and fill works will be required to achieve the correct road levels throughout the area. Given the extensive clearance, formation of hard surfaces and temporary structures existing in these areas, it is considered the compatibility of the roads and wholesale market site works during construction and operation would be fair. As a result of the overall small scale of the impacted area, it is considered that the magnitude of change will be small during construction and operation.										
FLR 14 MTRC East Rail												
14.1	MTRC East Rail	DP 8: Po Shek Wu Interchange Improvement	Study Area: 7.00ha / 1.3km DP Boundary: 0.46ha 150m	Small	Good	Good	Temporary Short	Permanent	Reversible	Irreversible	Negligible	Negligible

LR Code	Name	DPs and Site No. (Land Use Type*) Impacting LR	Area of LR within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		<u>Description of Key Impacts during Construction and Operation</u> DP construction works pass over the rail line and will have no direct impact on the integrity of the LR. As a result the compatibility is considered to be good during construction and operation. As there will be no direct impacts, the magnitude of change is considered to be negligible in construction and operation										
14.2	Sha Tau Kok Road (Lung Yeuk Tau)	DP 10: Fanling Bypass Eastern Section DP 12: Reprovision of Wholesale Market	Study Area: 5.4ha/1.6km DP Boundary: 1.41ha/ 20m	Small	Fair	Good	Temporary Short	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> A very small section of Sha Tau Kok Road lies within the DP boundary and is designated to remain as road so while the magnitude of change may be small during construction due to modifications to the existing road, during operation the LR will remain the same and the magnitude of change will be negligible.										
14.3	Fanling Highway	DP8: Po Shek Wu Interchange Improvement DP 10: Fanling Bypass Eastern Section	Site Area: 20.24ha/ 3.84km DP Boundary: 14.14ha/ 2km	Large	Fair	Good	Temporary Medium	Permanent	Reversible	Irreversible	Intermediate	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The majority of the proposed DP sits within this LR area. Construction impacts will result in the breaking out of surfaces, formation of junctions where the DP meets the highway and construction road barriers, noise barriers etc. Vegetation clearance of trees which fall within the corridor on verges will be required in localized areas. The works would involve disruption within the existing road corridor albeit in localized areas therefore the compatibility of the works is considered to be fair during construction. In operation the works will fall within the existing highway infrastructure corridor therefore are considered to have a good compatibility. Taking into account the likely large scale of the construction footprint, it is considered that the magnitude of change during construction would be intermediate. As the works will form part of the existing highway corridor in the future, the magnitude of change during operation is considered to be negligible.										
14.4	MTRC near Fanling Highway	DP 10: Fanling Bypass Eastern Section	Study Area: 9.80ha / 3.8km DP Boundary: 0.27ha 170m	Small	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Negligible	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> DP construction works pass over the rail line and will have no direct impact on the integrity of the LR. As a result the compatibility is considered to be good during construction and operation. As there will be no direct impacts, the magnitude of change is considered to be negligible in construction and operation										

Table 12D.6.2 Magnitude of Change on LCAs (DP 8, 9, 10 and 12)

Note - For LCAs where no impact is recorded, these are **not shown**.

LCA Code	Name	Site No. (Land Use Type*) Impacting LCA	Area of LCA within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
FLCA-1	Natural Hillside Landscape	The LCA is affected by sites: DP10:Fanling Bypass Eastern Section (New Road)	Study Area: 285.67ha DP Boundary 1.39ha	Small	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> Road construction works within this LCA will require the demolition of buildings, structures, clearance of vegetation (including trees), breaking out hard surfaces, soil stripping and extensive cut and fill works. In operation these areas will be replaced with a series of road systems including pedestrian crossing points, footpaths, drainage structures, noise barriers (various types). These works will remove a relatively small proportion of this character area therefore the compatibility during construction and operation is considered to be fair. As a result of the scale and extent of the works throughout the study area, the magnitude of change is considered to be small in construction and negligible in operation.										
FLCA-2	Rural and Urban Peripheral Village Landscape	The LCA is affected by sites: DP 8:Po Shek Wu Interchange Improvement (Major Improvement) DP9:Fanling Bypass Western Section (New Road) DP10:Fanling Bypass Eastern Section (New Road)	Study Area: 454.08ha DP Boundary: 25.56ha	Medium	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<u>Description of Key Impacts during Construction and Operation</u> Road construction works relating to these DPs will affect this LCA, works will require the demolition of buildings, structures, clearance of vegetation (including trees), breaking out hard surfaces, soil stripping and extensive cut and fill works. In operation these areas will be replaced with a series of road systems including pedestrian crossing points, footpaths, drainage structures, noise barriers (various types). These works will remove a relatively large proportion of this character area therefore the compatibility during construction and operation is considered to be poor. As a result of the medium scale and extent of the works throughout the study area, the magnitude of change is considered to be intermediate in operation.										
FLCA-3	Urban Development Landscape	This LCA is affected by site: DP 8: Po Shek Wu Interchange Improvement (Major Improvement) DP10: Fanling Bypass Eastern Section (New Road)	Study Area: 106.85ha DP Boundary: 1.77	Small	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Small	Negligible
		Road construction works within this LCA will require the minor road reconfiguration works. These works will remove a relatively small proportion of this character area therefore the compatibility during construction and operation is considered to be fair. As a result of the scale and extent of the works throughout the study area, the magnitude of change is considered to be small in construction and negligible in operation.										
FLCA-4	Industrial Landscape	The LCA is affected by sites: DP 8: Po Shek Wu Interchange Improvement (Major Improvement) DP9: Fanling Bypass Western Section (New Road) DP10: Fanling Bypass Eastern Section (New Road) DP12: Reprovision of wholesale market in FLN NDA.	Study Area: 89.05ha DP Boundary: 12.85ha	Small	Fair	Fair	Temporary Medium Term	Permanent	Reversible	Irreversible	Small	Small

LCA Code	Name	Site No. (Land Use Type*) Impacting LCA	Area of LCA within study area and within DP boundary (ha) or length (m or Km)	Physical extent of the impact (Small/ Medium/ Large)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		<u>Description of Key Impacts during Construction and Operation</u> Road construction works throughout this resource will require the demolition of buildings, structures, clearance of vegetation (including trees), breaking out hard surfaces, soil stripping and extensive cut and fill works. In operation these areas will be replaced with a series of road systems including pedestrian crossing points, footpaths, drainage structures, noise barriers (various types). These works will affect a significant proportion of this character area which is highly changeable and degraded through existing land use activities therefore the compatibility during construction and operation is considered to be fair. As a result of the small scale and extent of the works throughout the study area together with fair compatibility, the magnitude of change is considered to be small in construction and operation.										
FLCA-5	Lowland Agricultural Landscape	The LCA is affected by sites: DP 10:Fanling Bypass Eastern Section (New Road)	Study Area: 167.98ha DP Boundary: 5.29	Small	Poor	Poor	Temporary Medium Term	Permanent	Reversible	Irreversible	Small	Small
		<u>Description of Key Impacts during Construction and Operation</u> Road construction works throughout this resource will require the stripping of soils, clearance of vegetation (including pockets of trees), filling of irrigation ditches and breaking out hard surfaces. Cut and fill works will also be required to form the correct road levels. In operation this area will be replaced with a series of road systems including pedestrian crossing points, footpaths, drainage structures, noise barriers (various types). These works will result in a permanent loss of this character area therefore the compatibility during construction and operation is considered to be poor. As a result of the relatively small area affected, the magnitude of change during construction and operation is considered to be small										
FLCA-6	Major Transportation Corridor Landscape	The LCA is affected by sites: DP 8: Po Shek Wu Interchange Improvement (Major Improvement) DP10:Fanling Bypass Eastern Section (New Road)	Study Area: 41.04 / 10.54km DP Boundary: 18.37/2.21km	Medium	Good	Good	Temporary Short Term	Permanent	Reversible	Irreversible	Small	Negligible
		<u>Description of Key Impacts during Construction and Operation</u> The majority of the works will involve the reconfiguration isolated parts of the road to allow connection to the proposed DP, drainage provision and highway structures (road barriers, noise barriers etc.) therefore the overall compatibility of the work is considered to be fair during construction. In operation the works will fall within the existing highway infrastructure corridor therefore are considered to have a good compatibility. Taking into account the likely large scale of the construction footprint, it is considered that the magnitude of change during construction would be small. As the works will form part of the existing highway corridor in the future, the magnitude of change during operation is considered to be negligible.										
FLCA-7	Major Water Course Corridor Landscape	The LCA is affected by sites: DP9: Fanling Bypass Western Section (New Road) DP10:Fanling Bypass Eastern Section (New Road) DP12: Reprovision of wholesale market in FLN NDA.	Study Area: 66.52 / 9.1km DP Boundary: 22.12/7.00km	Medium	Fair	Fair	Temporary Short Term	Permanent	Reversible	Irreversible	Intermediate	Small
		<u>Description of Key Impacts during Construction and Operation</u> proposed DPs will be constructed at the top of the riverbank fronting the river channel, several bridges crossing point and a major alignment change will impact the channel. Vegetation clearance together with soil stripping and excavation works will also be required. The river banks has already been heavily altered through channelization and alignment modifications, therefore no valuable natural features will be lost or affected. In this case the compatibility of the scheme is considered to be fair both in construction and operation. Due to the relatively large scale of the area affected the magnitude of change is considered to be Intermediate during construction and small in operation.										

12D.7 Summary of Key Landscape Impacts

A summary of the key landscape impacts identified in **Tables 12D.6.1 and 12D.6.2** for each DP is provided below.

DP8 Po Shek Wu Interchange Improvements

The principal impacts as a result of the improvement works will occur during the construction stage. The following LR/LCAs are affected:

FLR-1.2 Shek Sheung River

FLR-7.7 Lowland Woodland near Tai Tau Leng

FLR-11.2 Sheung Shui Urban Development Area

FLR-12.12 Rural Development Area in Long Valley, Yin Kong and Hak Ka Wai

FLR- 12.13 Rural Development Area to the North of Hong Kong Golf Club

FLR-13.1 Sheung Shui Industrial/Open Storage Area

FLR-14.1 MTRC East Rail

FLR-14.3 Fanling HighwayFLCA-2 Rural and Urban Peripheral Village Landscape

FLCA-3 Urban Development Landscape

FLCA-4 Industrial Landscape

FLCA-6 Major Transportation Corridor Landscape

It is predicted that most impacts will be generated in relation to FLR 12.12 where construction works will encroach onto this resource requiring clearance of vegetation to form the road alignment. Generally the compatibility of these works is considered to be fair in construction and fair in operation.

DP9 Fanling Bypass Western Section

The principal impacts as a result of the bypass construction works will occur during the construction stage and operational stage. The following LR/LCAs are affected:

FLR-1.1 Ng Tung River (Fanling District)

FLR-4.2 Mitigation Wetland

FLR-6.2 Cham Shan and Wa Shan Hillside Woodlands

FLR-7.3 Hung Kiu San Tsuen Lowland Woodland

FLR-8.3 Shrubland/Grassland Mosaic at Cham Shan and Wa Shan

FLR-9.2 Fu Tei Au Agricultural Land

FLR-9.5 Agricultural Land at Sheung Shui Wa Shan

FLR-9.6 Agricultural Land in Wu Nga Lok Yueng, Siu Hang San Tsuen, Siu Hang Tsuen and Lung Yeuk Tau

FLR-12.5 Wa Shan Rural Development Area

FLR-13.1 Sheung Shui Industrial/Open Storage Area

FLR-13.2 Fanling Industrial Area

FLCA-2 Rural and Urban Peripheral Village Landscape

FLCA-4 Industrial Landscape

FLCA-7 Major Watercourse Corridor Landscape

It is predicted that most impacts will be generated in relation to FLR 4.2, 6.2, 7.3, 9.5 where construction works will encroach onto these resources requiring clearance of vegetation, mature trees, loss of agricultural land, cut and fill works to form the road alignment. Generally the compatibility of these works is considered to be poor in construction and operation.

DP10 Fanling Bypass Eastern Section

The principal impacts as a result of the bypass construction works will occur during the construction and operational stage. The following LR/LCAs are affected:

FLR-1.1 Ng Tung River (Fanling District)

FLR-1.4 Ma Wat River

FLR-2.4 Natural Streams at Siu Hang San Tsuen

FLR-6.2 Cham Shan and Wa Shan Hillside Woodlands

FLR-6.4 Hillside Woodlands at Lung Shan and Wa Mei Shan

FLR-8.3 Shrubland/Grassland Mosaic at Cham Shan and Wa Shan

FLR-9.6 Agricultural Land in Wu Nga Lok Yueng, Siu Hang San Tsuen, Siu Hang Tsuen and Lung Yeuk Tau

FLR-9.7 Agricultural Land South of Sha Tau Kok Road

FLR-11.3 Fanling Urban Development Area

FLR-12.5 Wa Shan Rural Development Area

FLR-12.6 Lung Yeuk Tau Rural Development Area

FLR-12.7 Rural Development Area at Wo Hop Shek and Wong Kong Shan

FLR-12.8 Rural Development Area at Ma Shi Po

FLR-14.2 Sha Tau Kok Road (Lung Yeuk Tau)

FLR-14.3 Fanling Highway

FLR-14.4 MTRC near Fanling Highway

FLCA 1 Natural Hillside Landscape

FLCA-2 Rural and Urban Peripheral Village Landscape

FLCA-3 Urban Development Landscape

FLCA-4 Industrial Landscape

FLCA-5 Lowland Agricultural Landscape

FLCA-6 Major Transportation Corridor Landscape

FLCA-7 Major Water Course Corridor Landscape

It is predicted that most impacts will be generated in relation to FLR 6.2, 6.4, 8.3, 9.6, 9.7 where construction works will encroach onto these resources requiring clearance of vegetation, mature trees, cut & fills works, loss of agricultural land to form the road alignment. Generally the compatibility of these works is considered to be poor in construction and operation.

DP 12: Reprovision of Wholesale Market

The principal impacts as a result of the wholesale market reprovision works will occur during the construction stage. The following LR/LCAs are affected:

FLR-1.4 Ma Wat River

FLR-13.2 Fanling Industrial Area

FLR-14.2 Sha Tau Kok Road (Lung Yeuk Tau)

FLCA-4 Industrial Landscape

FLCA-7 Major Water Course Corridor Landscape

It is predicted that most impacts related to the DP construction will be limited due to the good compatibility with the receiving landscape.

12D.8 Significance of Landscape Impacts

The potential significance of landscape impacts during the construction and operational phases, before mitigation, is provided in **Tables 12D.8.1** and **12D.8.2** below. The assessment follows the methodology proposed in **Section 12.18** and the matrix provided in **Table 12.18.1**.

Landscape impacts are presented on **Figures 12.52.23 and 12.52.41** to 50.

Table 12D.8.1 Significance of landscape impacts on LRs (DP 8, 9, 10 and 12)

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of Impact (Large/ Intermediate/ Small/ Negligible		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Constructio n	Operation
FLR 1	Channelized Water Course					
1.1	Ng Tung River (Fanling District)	Medium	Small	Small	Slight	Slight
1.2	Shek Sheung River	Medium	Negligible	Negligible	Insignificant	Insignificant
1.4	Ma Wat River	Medium	Large	Intermediate	Substantial	Moderate
FLR 2	Water Course					
2.4	Natural Streams at Siu Hang San Tsuen	High	Small	Small	Moderate	Moderate
FLR 4	Marsh / Wetland					
4.2	Mitigation Wetland	High	Intermediate	Intermediate	Moderate	Moderate
FLR 6	Hillside Woodland					
6.2	Cham Shan and Wa Shan Hillside Woodland	High	Intermediate	Intermediate	Moderate	Moderate
6.4	Hillside Woodland at Lung Shan and Wa Mei Shan	High	Intermediate	Intermediate	Moderate	Moderate
FLR 7	Lowland Woodland					
7.3	Hung Kiu San Tsuen Lowland Woodland	Medium	Small	Small	Moderate	Moderate

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of Impact (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Constructio n	Operation
7.7	Lowland Woodland near Tai Tau Leng	Medium	Intermediate	Intermediate	Moderate	Moderate
FLR 8	Shrubland/Grassland Mosaic					
8.3	Shrubland/Grassland Mosaic at Cham Shan and Wa Shan	Medium	Small	Small	Slight	Slight
FLR 9	Agricultural Land					
9.2	Fu Tei Au Agricultural Land	Medium	Small	Negligible	Slight	Insignificant
9.5	Agricultural Land at Sheung Shui Wa Shan	Medium	Intermediate	Intermediate	Moderate	Moderate
9.6	Agricultural Land in Wu Nga Lok Yueng, Siu Hang San Tsuen, Siu Hang Tsuen and Lung Yeuk Tau	Medium	Intermediate	Intermediate	Moderate	Slight
9.7	Agricultural Land in South of Sha Tau Kok Road	Medium	Intermediate	Intermediate	Moderate	Moderate
FLR 11	Urban Development Area					
11.2	Sheung Shui Urban Area	Low	Small	Negligible	Slight	Insignificant
11.3	Fanling Urban Area	Low	Small	Negligible	Slight	Insignificant

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of Impact (Large/ Intermediate/ Small/ Negligible		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Constructio n	Operation
FLR 12	Rural Development Area					
12.5	Wa Shan Rural Development Area	Medium	Small	Negligible	Slight	Insignificant
12.6	Lung Yeuk Tau Rural Development Area	Medium	Small	Negligible	Slight	Insignificant
12.7	Rural Development Area at Wo Hop Shek and Lung Shan	Low	Small	Negligible	Slight	Insignificant
12.8	Rural Development Area at Ma Shi Po	Medium	Small	Negligible	Slight	Insignificant
12.12	Rural Development Area in Long Valley, Yin Kong and Hak Ka Wai	High	Small	Negligible	Moderate	Insignificant
12.13	Rural Development Area to the North of Hong Kong Golf Club	Low	Small	Negligible	Slight	Insignificant
FLR 13	Industrial / Open Storage					
13.1	Sheung Shui Industrial/ Open Storage Area	Low	Intermediate	Small	Slight	Slight

LR Code	Name	LR Sensitivity (High/ Medium/ Low)	Magnitude of Impact (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Constructio n	Operation
13.2	Fanling Industrial Area	Low	Small	Small	Slight	Slight
FLR 14	Major Transportation Corridor					
14.1	MTRC East Rail	Low	Negligible	Negligible	Insignificant	Insignificant
14.2	Sha Tau Kok Road (Lung Yeuk Tau)	Medium	Small	Negligible	Slight	Insignificant
14.3	Fanling Highway	Medium	Intermediate	Negligible	Moderate	Insignificant
14.4	MTRC near Fanling Highway	Low	Negligible	Negligible	Insignificant	Insignificant

In summary for LR, substantial adverse impacts have been predicted in the construction stage prior to mitigation in relation to FLR-1.4 Ma Wat Channel due the large scale works involved with the realignment of the river channel to accommodate the alignment of the new Fanling Bypass. These impacts would reduce to moderate in operation as the works generally return the channel back to the original condition albeit on a different alignment.

Moderate adverse impacts are predicted at FLR4.2 Mitigation Wetland due to the required filling works to form the Fanling Bypass. Additionally, FLR6.2 Cham Shan and Wa Shan Hillside Woodland, FLR 6.4 Hillside Woodland at Lung Shan and Wa Mei Shan, FLR7.3 Hung Kiu San Tsuen Lowland Woodland, FLR7.7 Lowland Woodland near Tai Tau Leng, FLR 9.5 Agricultural Land at Sheung Shui Wa Shan and FLR9.6 Agricultural Land in Wu Nga Lok Yueng, Siu Hang San Tsuen, Siu Hang Tsuen and Lung Yeuk Tau and FLR9.7 Agricultural Land South of Sha Tau Kok Road will also experience moderate adverse impacts during construction and operation, prior to mitigation, as a result of tree felling and filling of agricultural land which will lead to a direct loss of these landscape resources within the road construction works.

FLR2.4 Natural Stream at Siu Hang San Tsuen will be affected by Fanling Bypass Eastern Section; moderate adverse impacts are predicted due to the high sensitivity of this natural feature.

In construction moderate adverse impacts will occur in relation to FLR 12.12 Rural Development Area in Long Valley, Yin Kong and Hak Ka Wai and FLR 14.3 Fanling Highway, this moderate adverse impact will drop to insignificant mainly due to the compatibility of the LRs with the previously developed landscape and limited extent of the impact area.

Slight adverse impacts would be experience by FLR 1.1 Ng Tung River (Fanling District), FLR8.3 Shrubland/Grassland Mosaic at Cham Shan and Wa Shan, FLR9.2 Fu Tei Au Agricultural Land, FLR12.5 Wa Shan Rural Development Area, FLR12.6 Lung Yeuk Tau Rural Development Area, FLR 12.7 Rural Development Area at Wo Hop Shek and Wong Kong Shan, FLR12.8 Rural Development Area at Ma Shi Po, FLR12.13 Rural Development Area to the North of Hong Kong Golf Club, FLR13.1 Sheung Shui Industrial/Open Storage Area, FLR13.2 Fanling Industrial Area, and FLR 14.2 Sha Tau Kok Road (Lung Yeuk Tau). In the case of FLR 9.2, 12.5, 12.6, 12.7, 12.8, 12.13 and 14.2, the impact significance would drop to insignificant during operation as a result of the limited extent of the area impacts and compatibility of the proposed road works with these LRs.

The remaining LRs with respect to industrial/ open storage and major infrastructure corridors such as the MTRC East Rail will all experience a slight or insignificant impact at the construction and operational stage due to their sensitivity rating and overall good compatibility with the road developments.

Table 12D.8.2 Significance of Impacts on LCAs (DP8, 9, 10 and 12)

LCA Code	Name	LCA Sensitivity (High/ Medium/ Low)	Magnitude of Impact (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)	
			Construction	Operation	Construction	Operation
FLCA 1	Natural Hillside Landscape	High	Small	Negligible	Moderate	Insignificant
FLCA 2	Rural and Urban Peripheral Village Landscape	Medium	Intermediate	Intermediate	Moderate	Moderate
FLCA 3	Urban Development Landscape	Low	Small	Negligible	Slight	Insignificant
FLCA 4	Industrial Landscape	Low	Small	Small	Slight	Slight
FLCA 5	Lowland Agricultural Landscape	Medium	Small	Small	Slight	Slight
FLCA 6	Major Transportation Corridor Landscape	Low	Small	Negligible	Slight	Insignificant
FLCA 7	Major Water Course Corridor Landscape	Medium	Intermediate	Small	Moderate	Slight

In summary for LCAs, moderate adverse impacts are predicted in relation to FLCA 2 Rural and Urban Peripheral Village Landscape and FLCA 7 Major Water Course Corridor Landscape in the construction stage prior to mitigation, as these LCAs will be exposed to the majority of the road improvements, bypass and associated development works.

It is predicted that FLCA 1 will experience moderate adverse impacts in the construction stage as a small area will fall within the bypass construction works area. In operation this will drop to insignificant as a result of the limited extent of the intrusion into this zone.

Slight adverse impacts were identified in the construction stage, prior to mitigation, in the assessment in relation to FLCA 5 Lowland Agricultural Landscape; this is as a result of the small scape loss of the medium sensitivity agricultural land as a result of the DPs.

Slight adverse impacts are predicted in relation to FLCA 3 Urban Development Landscape and FLCA 6 Major Transportation Corridor as a result of the construction works associated with Po Shek Wu Interchange Improvements and a small section of the Fanling Bypass works at Sha Tau Kok Road. In both cases the impact would drop to insignificant during the operational stage as the road works would be compatible with the urban / infrastructure characters.

Slight impacts are predicted in relation to FLCA 4 Industrial Landscape as is considered to have a low sensitivity rating and good compatibility with the proposed works. In this case the works are unlikely to have a beneficial impact as identified within the Schedule 3 study as the road have a neutral influence within the industrial areas.

12D.9 Landscape and Visual Mitigation Measures

The proposed mitigation measures for the Project are summarised in **Table 12D.9.1** below. The same table also lists the agents responsible for the capital funding, the implementation and the maintenance of the suggested measures. These agents will be agreed before the start of construction.

Table 12D.9.1 Summary of proposed mitigation measures

Mitigation Measure Code	Summary Description	Capital Funding Agency ⁽¹⁾	Implementation Agency	Post-Construction Maintenance Agency ⁽²⁾
MM1	Minimum Topographical Change	Government	Contractors of the Government	n/a
MM2	Detailed Design - Visual	Government	Contractors of the Government	HyD
MM4	Tree Protection & Preservation	Government	Contractors of the Government	n/a
MM5	Tree Transplantation	Government	Contractors of the Government	HyD/ LCSD
MM6	Slope Landscaping	Government	Contractors of the Government	HyD/ LCSD
MM7	Compensatory Planting	Government	Contractors of the Government	HyD/ LCSD

⁽¹⁾ CEDD/ other government departments will be responsible for funding except where sites are tendered out to private investors, when these investors will be responsible for the funding.

⁽²⁾ The Contractor will be responsible for landscaping during the agreed establishment and maintenance period. Other designated maintenance agents to take up maintenance of landscaping after end of agreed period.

Mitigation Measure Code	Summary Description	Capital Funding Agency ⁽¹⁾	Implementation Agency	Post-Construction Maintenance Agency ⁽²⁾
MM8	Woodland Compensatory Planting	Government	Contractors of the Government	AFCD ⁽³⁾
MM9	Vertical Greening	Government	Contractors of the Government	HyD/ LCSD
MM11	Screen Planting	Government	Contractors of the Government	HyD/ LCSD
MM12	Road Greening	Government	Contractors of the Government	HyD/ LCSD
MM13	Marsh/Wetland Compensation	Government	Contractors of the Government	CEDD/ LCSD/ AFCD
MM14.3	Watercourse Impact Mitigation – Enhancement Planting on Embankment	Government/Private Section	Contractors of the Government/Private Sector	DSD/LCSD/ AFCD
MM14.4	Watercourse Impact Mitigation – Avoid affecting Watercourses	Government	Contractors of the Government	DSD
MM16	Screen Hoarding	Government	Contractors of the Government	n/a
MM17	Light Control	Government/Private Sector	Contractors of the Government	n/a

Minimising Topographical Change (MM1)

To minimise landscape and visual impacts, the vertical and horizontal alignment of the at-grade road construction works should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain. Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimize landform changes and land resumption, whilst also considering visual amenity. Earthworks and engineered slopes should be designed to visually interesting landform, compatible with the surrounding landscape and to mimic the natural contouring and terrain e.g. introduction and continuation of natural features such as spurs and ridges where appropriate to support landscape and visual assimilation with the surrounding terrain.

This measure is recommended throughout the road construction in relation to the channelised water courses (Ng Tung River and Ma Wat River) where the Fanling Bypass will have numerous interfaces and

⁽³⁾ AFCD are suggested as the management department for specific woodland compensatory planting as detailed in the Chapter 13 of the EIA Report.

crossing point; care needs to be taken in terms of future alterations to avoid damaging this resource further.

Minimising topographical change has also been recommended in relation to marshland, hillside woodland, shrubland/ grassland mosaic, agricultural land and within the rural development areas. In this case the road works will interfere with natural terrain and minimising the extent of this interference will assist in reducing the overall impact.

Detailed Design (Visual) (MM2)

The construction and operational footprint of the road infrastructure components should be kept to a practical minimum. The form, textures, finishes and colours of the proposed road structures such as viaducts, footbridges and noise barriers should aim to be compatible with the existing surroundings. The engineering design should be refined to reduce visual bulkiness and incorporate aesthetically pleasing surface treatments to promote visual amenity. For example, textured finishes for concrete surfaces to assist in breaking up uniform surface treatments on parapet structures should be considered. In addition light earthy tone colours such as shades of green, shades of grey, shades of brown and off-white should also be considered to reduce the visibility of the development components.

Noise barriers should be kept to a practical minimum and be of such a design as to integrate as well as possible into the landscape setting, where appropriate transparent materials should be incorporated to help reduce visual obstruction.

Tree Protection & Preservation (MM4)

Exiting trees to be retained within the Project Site should be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage).

Tree Transplantation (MM5)

Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit. The final locations of transplanted trees should be agreed prior to commencement of the work.

Slope Landscaping (MM6)

Site formation has been reduced as far as possible to avoid substantial slope cutting (also see MM1).

Hydroseeding of modified slopes should be done as soon as grading works are completed to prevent erosion and subsequent loss of landscape resources and characters. Woodland tree seedlings and/ or shrubs should be planted where the slope gradient and site conditions allow. In addition, landscape planting should be provided for the retaining structures associated with modified slopes, where conditions allow. All slope landscaping works should comply with *GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes*.

Slope landscaping has been recommended in relation to hillside and lowland woodland areas together with shrubland/grassland mosaic resources as slope cutting works may be required.

Compensatory Planting (MM7)

Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006. Compensatory planting is proposed at the potential open areas such as open spaces, amenity areas, open areas of the streetscapes, as well as the open areas within development lots. The provision of space for compensatory planting takes into account both schedule 2 and 3 designated projects.

The location of compensatory planting for DP Package D also includes the roadside areas, street tree planting, central medians (within the centre of the Fanling Highway) and any soft landscape areas affected by the works area.

For specific woodland compensatory planting, see MM8.

Woodland Compensatory Planting (MM8)

Specific Woodland compensatory planting is proposed for any areas of woodland that are unavoidably affected. The location and design of the woodland compensatory planting will principally be within habitats of lower value such as upland grassland. These have been considered both within the NDAs.

The proposed locations are mostly on the foothills of Tai Shek Mo and on Fung Kong Shan in KTN NDA with a small area in the northern FLN NDA.

The total area allocated for compensatory woodland planting is more than 16 ha. This provision allows in part for the fact that it will take some time for the compensatory planting to achieve the landscape and ecological function and value of the area to be lost. In addition, it allows for the fact that not all of the areas identified for planting will prove to be plantable, by virtue of topography and ground conditions and, especially, because though the areas identified are largely grassland it is inevitable

that these areas will already support some patches of trees and shrubs which would be inappropriate for further planting.

The intention of the compensatory woodland will be to recreate areas of quality woodland, not necessarily to compensate for loss of trees on a like for like basis. Native tree species are suggested for planting, including *Ailanthus fordii*, *Bischofia javanica*, *Castanopsis fissa*, *Celtis sinensis*, *Cinnamomum burmannii*, *Cinnamomum camphora*, *Xanthoxylum avicennae*, *Liquidambar formosana*, *Sapium discolor*, *Schefflera heptaphylla* and *Ilex rotunda*. In addition some understory vegetation may be planted including shrubs such as *Atalantia buxifolia*, *Diospyros vaccinioides*, *Gardenia jasminoides*, *Ixora chinensis*, *Ligustrum sinense*, *Litsea rotundifolia*, *Melastoma malabathricum*, *Melastoma dodecandrum*, *Rhodomyrtus tomentosa*, *Rhaphiolepis indica*, and *Rhododendron simsii*.

Vertical Greening (MM9)

Where space and appropriate planting conditions allow (i.e. where suitable depth of planting medium is possible, maintenance access available and enough light penetration to ground level), climbing plants should be considered to grow up vertical surfaces such as viaduct piers or noise barriers. The planting once established will assist in breaking up the appearance of uniform engineered structures and surfaces.

The proposed Fanling Bypass comprises numerous vertical structures including pedestrian footbridges, viaduct piers and noise barriers which can receive vertical greening treatment as described above.

The noise barriers structures proposed in relation to the Po Shek Wu Interchange Improvement can also receive vertical where space permits.

Screen Planting (MM11)

Tall screen/buffer trees and shrubs should be planted to screen proposed structures such as roads and buildings. This measure may additionally form part of the compensatory planting and will improve compatibility with the surrounding environment and create a pleasant pedestrian environment.

Road Greening (MM12)

For viaducts, soft landscaping should be provided to soften the hard, straight edges (for climbers used to cover the vertical, hard surfaces of the piers – see MM9 Vertical Greening) and shade tolerant plants should be planted, where light is insufficient, to improve aesthetic value of areas under viaducts. Both at grade planting and use of elevated planters should be considered for the soft landscaping of viaducts, taking into account the preference to minimise the overall viaduct bulk and integrate architectural forms and textural finishes which improve aesthetics.

At grade roads planting should be considered along central dividers and on road islands e.g. in the middle of roundabouts. (Roadside planting i.e. at the road edge and not in the central divider or road island, is considered part of MM11 Screen Planting). HQ/GN/15 - Guidelines for

Greening Works along Highways should be referred to for greening of highways specifically and Development Bureau TCW No. 2/2013 – Greening on Footbridges and Flyovers for footbridges and flyovers.

MM12 is used throughout the Fanling Bypass works where space to include planted central reservations and verges has been maximised.

Marsh/Wetland Compensation (MM13)

Works in relation to the Ng Tung River and Ma Wat River should match the existing and include enhancement planting to upgrade the channels as appropriate, including consideration of wetland planting along embankments where appropriate. The provision of space for marsh/wetland compensation takes into account both schedule 2 and 3 designated projects.

This measure has been recommended in relation to FLR 4.2 Mitigation Wetland where this LR will be filled in relation to the Fanling Bypass works.

Direct loss of marsh and wetland areas caused by the DPs will be mitigated by compensatory habitat and management in the proposed Long Valley Nature Park (LVNP) where there will be some addition of wetland areas.

Watercourse Impact Mitigation (MM14)

For channelized watercourses if these are modified, they should match the existing and include enhancement planting to upgrade the channels as appropriate, including consideration of wetland planting along embankments where appropriate.

Enhancement Planting on Embankment MM14.3

For channelised watercourses, if these are modified, the Drainage Services Department Practice Note No.1/2005 – Guidelines on Environmental Considerations for River Channel Design, should be considered and appropriate mitigation measures included ensuring the new watercourses match the existing as far as possible. Measures can include enhancement planting to upgrade the channels as appropriate, including consideration of wetland planting along embankments where appropriate; as well as consideration of the best materials for the channel lining (e.g. gabion). All measures must also ensure any necessary maintenance work can be carried out and that the channel meets all its requirements for water flow.

The proposed alignment of the Fanling Bypass works will interface and cross the channels of Ng Tung River and Ma Wat River. In addition the alignment of Ma Wat River will be changed to the west of Wing Ning Tsuen requiring a new channel to be excavated and the previous channels filled in, to allow for the new bypass alignment. As stated above, the replacement channel works should match the existing and where possible include enhancement planting. Both rivers presently have a grasscrete/ soft bank treatments to the riverbank which should be continued and replaced where required.

Avoid affecting Watercourses (MM14.4)

For the stream at Siu Hang San Tsuen, part of the lower stream would be located underneath the viaduct for the proposed Fanling Bypass Eastern Section. In order to avoid impacts to the stream, the detailed final design of the viaduct should follow the recommendations of ETWB TCW No. 5/2005 as well as Building Department (BD) Practice Note for Authorized Persons and Registered Structural Engineers 295: Protection of natural streams/rivers from adverse impacts arising from construction works. To the south of the viaduct where the stream flows through the area will be protected by a 10m buffer in which natural vegetation will be retained and enhanced and human activities will be limited in order to avoid direct impacts to the stream bed and to minimise potential indirect impacts to the stream and riparian corridor.

Screen Hoarding (MM16)

Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders with public accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used.

Light Control (MM17)

Construction day and night time lighting should be controlled to minimize glare impact to adjacent VSRs during the construction stage. Street and night time lighting shall also be controlled to minimize glare impact to adjacent VSRs during the operation phase. This is considered a general measure for good practice.

Other good practise measures.

For areas unavoidably disturbed by the Project on a short term basis e.g. works areas, the general principle to try and restore these to their former state to suit future land use, should be adhered to.

With regard to topsoil, where identified, it should be stripped, treated appropriately, and where suitable and practical stored for re-use in the construction of the soft landscape works such as roadside amenity strips, and open space sites. It is assumed that the topmost 100mm of soil surface will be topsoil material. This good site practice and will also minimize off-site disposal.

For all planting, this should be installed as soon as the areas become available, to achieve early establishment.

12D.10 Significance of Residual Landscape Impacts upon mitigation

The proposed landscape and visual mitigation measures, as described in **Section 12D.9**, have been applied to the various impacts and used to identify potential residual impacts.

The potential significance of residual landscape impacts during the construction and operational phases, before and after mitigation at day 1 and year 10, are provided in **Tables 12D.10.1** and **12D.10.2**. The tables assume that the appropriate mitigation measures have been applied and that the full effect of the soft landscape mitigation measures would be fully realised and established after 10 years.

Landscape mitigation measures are presented on **Figures 12.52.70 to 75**.

Typical sections are presented on **Figure 12.52.81 to 86**.

Table 12D.10.1 Significance of landscape impacts on LRs (DP 8, 9, 10 and 12)

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation (Day 1)	Operation (Year 10)
FLR 1	Channelized Water Course							
1.1	Ng Tung River (Fanling District)	Slight	Slight	1, 4, 5, 14.3	1, 4, 7	Slight	Insignificant	Insignificant
1.2	Shek Sheung River	Insignificant	Insignificant	1, 4, 5, 14.3	1, 4, 7	Insignificant	Insignificant	Insignificant
1.4	Ma Wat River	Substantial	Moderate	1, 4, 14.3,	1, 4, 7	Moderate	Slight	Insignificant
FLR 2	Water Course							
2.4	Natural Streams at Siu Hang San Tsuen	Moderate	Moderate	1, 4, 5 14.4	1, 4, 7	Slight	Insignificant	Insignificant
FLR 4	Marsh / Wetland							
4.2	Mitigation Wetland	Moderate	Moderate	1, 13	1, 13	Slight	Slight	Insignificant
FLR 6	Hillside Woodland							
6.2	Cham Shan and Wa Shan Hillside Woodland	Moderate	Moderate	1, 4, 5, 6, 8	1, 4, 6, 8	Moderate	Slight	Insignificant

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation (Day 1)	Operation (Year 10)
6.4	Hillside Woodland at Lung Shan and Wa Mei Shan	Moderate	Moderate	1, 4, 5, 6, 8	1, 4, 6, 8	Moderate	Slight	Insignificant
FLR 7	Lowland Woodland							
7.3	Hung Kiu San Tsuen Lowland Woodland	Moderate	Moderate	1, 4, 5, 6, 8	1, 4, 6, 8	Moderate	Slight	Insignificant
7.7	Lowland Woodland near Tai Tau Leng	Moderate	Moderate	1, 4, 5, 6, 8	1, 4, 6, 8	Moderate	Slight	Insignificant
FLR 8	Shrubland/Grassland Mosaic							
8.3	Shrubland/Grassland Mosaic at Cham Shan and Wa Shan	Slight	Slight	1, 5, 6, 7	1, 6, 7	Slight	Insignificant	Insignificant
FLR 9	Agricultural Land							
9.2	Fu Tei Au Agricultural Land	Slight	Insignificant	1, 5, 4, 7	1, 4, 7	Slight	Insignificant	Insignificant
9.5	Agricultural Land at Sheung Shui Wa Shan	Moderate	Moderate	1, 4, 5, 7	1, 4, 7	Moderate	Moderate	Slight

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation (Day 1)	Operation (Year 10)
9.6	Agricultural Land in Wu Nga Lok Yueng, Siu Hang San Tsuen, Siu Hang Tsuen and Lung Yeuk Tau	Moderate	Slight	1, 4, 5, 7	1, 4, 7	Moderate	Moderate	Slight
9.7	Agricultural Land in South of Sha Tau Kok Road	Moderate	Moderate	1, 4, 5, 7	1, 4, 7	Moderate	Moderate	Slight
FLR 11	Urban Development Area							
11.2	Sheung Shui Urban Area	Slight	Insignificant	1, 4, 5, 7	1, 4, 7	Insignificant	Insignificant	Insignificant
11.3	Fanling Urban Area	Slight	Insignificant	1, 4, 5, 7	1, 4, 7	Insignificant	Insignificant	Insignificant
FLR 12	Rural Development Area							
12.5	Wa Shan Rural Development Area	Slight	Insignificant	1, 4, 5, 7	1, 4, 7	Slight	Insignificant	Insignificant
12.6	Lung Yeuk Tau Rural Development Area	Slight	Insignificant	1, 4, 5, 7	1, 4, 7	Slight	Insignificant	Insignificant

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation (Day 1)	Operation (Year 10)
12.7	Rural Development Area at Wo Hop Shek and Lung Shan	Slight	Insignificant	1, 4, 5, 7	1, 4, 7	Slight	Insignificant	Insignificant
12.8	Rural Development Area at Ma Shi Po	Slight	Insignificant	1, 4, 5, 7	1, 4, 7	Slight	Insignificant	Insignificant
12.12	Rural Development Area in Long Valley, Yin Kong and Hak Ka Wai	Moderate	Insignificant	1, 4, 5, 7	1, 4, 7	Slight	Insignificant	Insignificant
12.13	Rural Development Area North of Hong Kong Golf Club	Slight	Insignificant	1, 4, 5, 7	1, 4, 7	Slight	Insignificant	Insignificant
FLR 13	Industrial / Open Storage							
13.1	Sheung Shui Industrial/Open Storage Area	Slight	Slight	4, 5, 7	4, 7	Slight	Insignificant	Insignificant
13.2	Fanling Industrial Area	Slight	Slight	4, 5, 7	4, 7	Insignificant	Insignificant	Insignificant

LR Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation (Day 1)	Operation (Year 10)
FLR 14	Major Transportation Corridor							
14.1	MTRC East Rail	Insignificant	Insignificant	n/a	n/a	Insignificant	Insignificant	Insignificant
14.2	Sha Tau Kok Road (Lung Yeuk Tau)	Slight	Insignificant	1, 4, 5, 7	1, 4, 7	Slight	Insignificant	Insignificant
14.3	Fanling Highway	Moderate	Insignificant	1, 4, 5, 7	1, 4, 7	Slight	Insignificant	Insignificant
14.4	MTRC near Fanling Highway	Insignificant	Insignificant	1, 4, 5, 7	1, 4, 7	Insignificant	Insignificant	Insignificant

Table 12D.10.2 Significance of Impacts on LCAs (DP8, 9, 10 and 12)

LCA Code	Name	Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
		Construction	Operation	Construction	Operation	Construction	Operation (Day 1)	Operation (Day 10)
FLCA-1	Natural Hillside Landscape	Moderate	Insignificant	1, 4, 6, 5, 7	1, 4, 7	Slight	Insignificant	Insignificant
FLCA-2	Rural and Urban Peripheral Village Landscape	Moderate	Moderate	1, 4, 5, 7	1, 4, 7	Moderate	Slight	Insignificant
FLCA-3	Urban Development Landscape	Slight	Insignificant	1, 4, 5, 7	1, 4, 7	Slight	Slight	Insignificant
FLCA-4	Industrial Landscape	Slight	Slight	1, 4, 5, 7	1, 4, 7	Insignificant	Insignificant	Insignificant
FLCA-5	Lowland Agricultural Landscape	Slight	Slight	1, 4, 5, 7	1, 4, 7	Slight	Slight	Slight
FLCA-6	Major Transportation Corridor Landscape	Slight	Insignificant	1, 4, 5, 7	1, 4, 7	Insignificant	Insignificant	Insignificant
FLCA-7	Major Water Course Corridor Landscape	Moderate	Slight	1, 4, 5, 7, 14	1, 4, 7	Moderate	Slight	Insignificant

In summary, prior to mitigation, substantial adverse impacts have been predicted in the construction stage for FLR 1.4 Ma Wat River. This is as a result of the major excavations required for the channel realignment (approximately 600m in length) to accommodate the route of the Fanling Bypass. As the LR would be replaced albeit in a different alignment, the impact would reduce to moderate adverse in operation without any mitigation. It is considered through the application of mitigation measures in the construction stage including minimising the requirement for topographical changes, enhancement planting along embankment, protecting and preserving existing trees, transplanting trees where feasible together with replacement of the channel to match the existing that this impact can be reduced to slight by operation day 1. Following the establishment of transplanted and compensatory planting by year 10 of operation, these impacts would have reduced to insignificant.

The Natural Stream at Siu Hang San Tsuen (FLR-2.4) will suffer a small change due to the Project (where it flows under the Fanling Bypass Eastern Section) due to the high sensitivity, a moderate adverse impact is predicted prior to mitigation in construction and operation. The affected stream at Siu Hang San Tsuen, has largely been protected by changes to the proposed Schedule 3 boundary during the planning of the revised RODP with much of this stream avoided. However the stretch of this stream within the DP10 boundary would be located underneath the road viaduct. To the south of the viaduct the stream flows through the area D1-3, zoned as Open Space, prior to joining Ng Tung River. In this Open Space Zone a 10m buffer is proposed in which natural vegetation will be retained and enhanced. Human activities will be limited in order to avoid direct impacts to the stream bed and to minimise potential indirect impacts to the stream and riparian corridor. At detailed design, in order to avoid impacts to the stream, the design of the viaduct should follow guidelines such as ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/rivers from adverse impacts arising from construction works as well as Building Department (BD) Practice Note for Authorized Persons and Registered Structural Engineers 295: Protection of natural streams/rivers from adverse impacts arising from construction works. This will ensure that no viaduct footings or other structures are placed in the stream; in this case the impact is considered to reduce to slight at construction, becoming insignificant by day 1 and year 10 of operation.

Planning of the revised RODP has taken care to place much of the Mitigation Wetland in FLN NDA (FLR-4.2) that falls within the revised RODP on land for 'Open Space'. The main impacts on this resource are as a result of the Schedule 3 works however moderate adverse impacts in construction and operation, prior to mitigation, are predicted as a result of the construction of the Fanling Bypass Western Section. Whilst the overall area affected is relatively small (1.59ha), this is a highly sensitive and uncommon resource. To address this impact mitigation is provided in the form of the LVNP which will be managed and the land there,

including marsh and wetland areas, enhanced, with a slightly increase in wetland areas. Taking into account the LVNP enhancement and smaller level of impact as a result of the Schedule 2 work, the residual impact significance at construction and operation day 1 is considered to reduce to slight, and by year 10 when wetland and marshes in the LVNP mature, the residual impact will insignificant.

Although a relatively small area of Cham Shan and Wa Shan Hillside Woodland (FLR-6.2) and Hillside Woodland at Lung Shan and Wa Mei Shan (FLR-6.4) is affected by the construction of the Fanling Bypass, this LR has a high sensitivity and tree felling together with disturbance of natural topography is considered to generate moderate adverse impacts in construction and operation prior to mitigation. In this case, minimising the topographical change within the LR will assist in reducing the overall impact combined with tree preservation, tree transplantation and woodland compensation planting. Moderate adverse impacts would still remain in the construction stages post mitigation, however given the small areas affected planting measures would quickly address the impact reducing it to insignificant by year 10 of operation.

A number of agricultural landscape resources are predicted to experience moderate adverse impacts prior to mitigation in the construction and operational stage. These are FLR9.5 Agricultural Land at Sheung Shui Wa Shan, 9.6 Agricultural Land in Wu Nga Lok Yueng, Siu Hang San Tsuen, Siu Hang Tsuen and Lung Yeuk Tau and 9.7 Agricultural Land in South of Sha Tau Kok Road. Whilst there is no direct compensation for the agricultural land lost, direct mitigation includes the possible preservation and protection of any trees in such LRs and where unavoidably affected, transplantation and compensatory planting will assist in reducing the level of impact very slightly. The LVNP is a key component of the Project with preservation and even enhancement of agricultural land which is intended to help alleviate impacts on agricultural land losses across the whole NDA. In addition, this broad agricultural land category (LR9) encompasses both active and abandoned agricultural land including orchard areas. According to a further review and site inspection in December 2012/January 2013 by PlanD with assistance from AFCD, the amount of active agricultural land affected by the Project in FLN NDA is approximately 24 ha. According to the AFCD Annual Report 2011-2012, currently, there are 4,071 ha of abandoned agricultural land in Hong Kong and 734 ha of active agricultural farmland and as such, the affected agricultural land represents a small percentage of active agriculture land in Hong Kong. In the surrounding areas of the Project, 160 ha of land have been found potentially suitable for agricultural rehabilitation/re-site in the above mentioned site inspection. The major cluster (34 ha) is found at Kwu Tung South. Given all these considerations, the significance of impact on agricultural land in these areas will remain the same at construction and operation day 1, but by year 10 will have dropped to slight.

Moderate adverse impacts in construction and operation prior to mitigation are predicted in relation to FLR 7.3 Hung Kiu San Tsuen

Lowland Woodland, FLR 7.7 Lowland Woodland near Tai Tau Leng. These impacts are relate to the loss of lowland woodland resources along the alignments of the proposed Fanling Bypass and Po Shek Wu Interchange. The level of impact is considered to reduce to slight by day 1 and insignificant by year 10 as landscape planting works would provide some compensation and through woodland compensation.

Moderate adverse impacts during construction prior to mitigation are predicted in relation to FLR12.12 Rural Development Area in Long Valley, Yin Kong and Hak Ka Wai and FLR 14.3 Fanling Highway. Given the previously developed nature of 12.12 and existing highway function of 14.3, the proposed works are considered to have fair/good compatibility. The initial impacts would be generated due to the large scale of the construction works. In operation it is considered that the impacts would drop to insignificant levels due to the good compatibility of the DPs with the receiving landscape. In terms of mitigation works, minimisation of topographical change, tree transplanting and compensatory planting is predicted to reduce the moderate adverse impact at the construction stage to slight in relation to the both LR's and insignificant by operation day 1.

Slight adverse impacts prior to mitigation are predicted in relation to FLR 1.1 Ng Tung River (Fanling District), 8.3 Shrubland/Grassland Mosaic at Cham Shan and Wa Shan, 9.2 Fu Tei Au Agricultural Land, 11.2 Sheung Shui Urban Area, 11.3 Fanling Urban Area, 12.5 Wa Shan Rural Development Area, 12.6 Lung Yeuk Tau Rural Development Area, 12.7 Rural Development Area at Wo Hop Shek and Lung Shan, 12.8 Rural Development at Ma Shi Po, 12.13 Rural Development Area North of Hong Kong Golf Club, 13.1 Sheung Shui Industrial/Open Storage Area 13.2 Fanling Industrial Area and 14.2 Sha Tau Kok Road (Lung Yeuk Tau). These impacts principally relate to loss of associated tree cover, large scale construction footprint and in the case of FLR 1.1 and 14.2 excavation works associated with the construction of the Fanling Bypass. It is considered that these impacts can be reduced to slight or insignificant levels at the construction stage through tree protection, transplantation, compensatory planting mitigation measures combined with minimising topographical changes. By year 10 all impacts would be insignificant.

It is considered that all the remaining adverse impacts on LR's could be mitigated to insignificant levels at the construction and operational stage through mitigation works, as these remaining resources fall either within industrial or open storage areas where the works would have a good compatibility with the receiving landscape.

The Lowland Agricultural Landscape (FLCA5) affected by the Schedule 2 DPs is predicted to experience slight adverse impacts, prior to mitigation, in the construction and operational stage. Careful planning of the revised RODP means about 58 ha are designated to remain as agricultural land in KTN and FLN NDAs but in these areas referenced agricultural land will be lost. There is no direct compensation measure for the agricultural land lost but some mitigation can be achieved preservation and

protection of any trees and where unavoidably affected, transplantation and compensatory planting will assist in reducing the level of impact very slightly. The LVNP is a key component of the Project with preservation and even enhancement of agricultural land which is intended to help alleviate impacts on agricultural land losses across the whole NDA. In the surrounding areas of the Project, 160 ha of land has been found potentially suitable for agricultural rehabilitation/re-site by PlanD with assistance from AFCD. The major cluster (34 ha) is found at Kwu Tung South. By year 10 of operation it is considered the residual impact would remain at a slight adverse level.

Moderate adverse impacts are predicted prior to mitigation works in relation to FLCA1 Natural Hillside Landscape, FLCA2 Rural and Urban Peripheral Village Landscape and FLCA7 Major Water Course Corridor Landscape as a result of the road construction projects. In terms of LCA1, this relates to the high sensitivity of the LCA. The overall area affected in this case is limited and it is considered compensatory woodland planting would quickly reduce this impact to an insignificant level. In terms of FLCA2 and FLCA7, the impacts are mainly generated due to the overall scale of the construction footprint and associated medium sensitivity. In both cases these character areas have undergone development in the past and have capacity to accept a certain level of development. Through mitigation works, in particularly compensatory woodland planting, watercourse mitigation and minimising the need to alter topography, it is considered these impacts can be reduced to insignificant by year 10 of operation.

Slight adverse impacts are predicted in relation to FLCA 3 Urban Development Landscape, FLCA 4 Industrial Landscape and FLCA 6 Major Transportation Corridor Landscape at the construction stage prior to mitigation. The proposed works are considered to have a good compatibility with these LCAs, therefore would assimilate very quickly during operation. In all cases any adverse impacts can be mitigated to slight or insignificant levels by operation day 1. All impacts would be insignificant by operation year 10 through implementation of tree protection measures, tree transplantation and compensation planting.

12D.10.1 Conclusion

As a result of mitigation measures it is considered that all adverse impacts can be reduced to slight or insignificant levels at the operation stage for the majority of LRs and LCAs in relation to all DP Package D projects.

Mitigation works in relation to these DPs during the construction stage rely heavily on the minimisation of the footprint of the works area, avoidance of significant topographical changes together with retention and protection of existing trees / vegetation. These measures if deployed have the capacity to reduce, in most cases, the level of residual impact experienced by the LRs and LCAs at the construction stage.

It is not possible to fully mitigate all impacts in relation to loss of mature woodland, agriculture and wetland/marsh for all LRs and LCAs in the construction period and early operational stages, mainly as long periods of time are required to sufficiently compensate for this type of impact or sufficient/ suitable space allocated to provide compensation. Woodland compensation measures in combination with transplantation of existing trees (which can help to accelerate the establishment period) applied to the woodland LRs affected will reduce impact levels to slight or insignificant by year 10 of operation when planting has reached maturity.

In terms of agricultural land and wetland/marsh, the LVNP is a key component of the Project with preservation and even enhancement of these LRs which is intended to help alleviate the overall losses across the whole NDA.

Taking into account the above points it is considered that DP 8, 9, 10 and 12 would be broadly acceptable in terms of landscape impacts subject to the full implementation of recommended landscape mitigation measures.

12D.11 Visual Impact Assessment

Visual impacts have been assessed for the construction and operational phases of the Schedule 2 DPs with the methodology and processes as set out in **Section 12.19**.

12D.11.1 Visual Baseline Conditions

The FLN NDA site boundary occupies around 164 ha and is bound by Fu Tei Au Road to the north, the hill range of Cheung Po Tau, Cham Shan, Wa Shan and Ma Tau Leng to the north-east, Ma Wat River to the east, Sha Tau Kok Road and Ma Sik Road to the south, and Tin Ping Road, Jockey Club Road and Po Wan Road to the south-west with a very small section of the MTRC East Rail line binding it to the west.

Ng Tung River is a major visual component of the area, which flows along the base of the hill ranges to the north of Fanling and Sheung Shui. The area is generally of medium landscape value with high value upland areas of Cham Shan and Wa Shan defining one side of the river valley as a green backdrop into which San Wai/Tai Ling Firing Range integrates well. The urban areas of Fanling/ Sheung Shui, with a number of high rise structures and new developments as well as industries such as vehicle repair and material storage, define the other side of the river. The low-lying river flood plains in between are predominantly of a rural nature, with small scale agricultural plots (both active and abandoned) and some scattered residential settlements and isolated buildings and some open storage, which contrasts with the more natural character of the area. Sheung Shui Slaughter House and Shek Wu Hui Sewage Treatment Works are also located in the western area of this NDA, and Sheung Shui Water Treatment Works is located immediately to the north. At the north of Fanling/ Sheung Shui New Town, a number of traditional villages are concentrated, including Sheung Shui Heung, Sheung Shui Wa Shan, Siu

Hang Tsuen, Siu Hang San Tsuen and Kan Lung Tsuen, San Wai also lie to the north of the river and are set against the hillside backdrop.

DP 8 – Po Shek Wu Interchange Improvement

This DP, which forms part of the Po Shek Wu Road, is outside the FLN NDA site boundary. It is located to the south of the Sheung Shui urban area linking the Fanling Highway to the Shek Wu Hui district. Po Shek Wu Road passes between the village area of Tai Tau Leng and highrise residential towers of the Choi Yuen Estate, bridging over the MTRC East Rail Line adjacent to the industrial area on San Wan Road, finally linking to the main Sheung Shui urban area. As this is an existing road, development has already established along its alignment; mature street tree planting and plantations in addition to the surrounding buildings generally provides strong visual enclosure to the site. Whilst existing mature tree planting on either side of the road provides important visual amenity, this is an extremely busy 4-lane road (southern section increases to 5 lanes) with large junctions which generates a relatively low quality visual environment. Visibility to the wider landscape is generally restricted to glimpse views of the surrounding mountains however, as the road passes over the MTRC Rail line this open landscape corridor allows unrestricted views to the south east through the Sheung Shui urban area.

To cater for the traffic flow from the FLN NDA, improvement work, including realignment of the Po Shek Wu Road and the construction of an elevated southbound right-turning slip road to bypass the interchange, is proposed. In this case the proposed slip road will be elevated above the existing Po Shek Wu Road, at a level of +20mPD (i.e. road infrastructure has been stacked to reduce the overall footprint and accommodate the improvement works within the existing constraints). A fully enclosed noise barrier, approximately 6m high, will be constructed from the Fanling Highway over a 120m length. At this point the barrier changes to a semi-enclosed type which runs for 320m, splitting in two over the junction with Choi Yuen Road. The full and semi-enclosed barriers generally appears the same, the latter incorporates openings on the side panels. To accommodate the new slip road, the existing bridge crossing the MTR East Rail line will be widened.

The proposed general layout and extent of noise barriers works is presented on **Figure 12.52.74**. Sections demonstrating the elevated slip road and elevations are provided on **Figure 12.52.81 and 82**.

DP 9– Fanling Bypass Western Section

This DP interfaces with the northern extent of the FLN NDA boundary along its entire route; this also aligns with the curved route of Ng Tung River. Locally the landscape is low lying, comprising of a series of village areas, some open storage areas and small agricultural plots. Development is set back from the river edge. Tree planting along the river banks helps to conceal the low scale developed areas beyond whereas the open river corridor provides long distance views to the mountain landscape to the north. Open storage land uses in the vicinity

are a strong visual detractor in the landscape, in particularly associated with storage of containers along Man Kam To Road.

A roundabout formed on Man Kam To Road on the northside of Ng Tung River is the western most extent of the DP; a pedestrian footbridge crosses the roundabout connecting footpaths to the north, east and west of the roundabout. From this point the bypass heads east and will comprise of two lanes (total 7.5m width) running broadly parallel (not adjacent) to Ng Tung River. The first 200m (approx.) will include a 5m high vertical noise barrier on the north side of the road forming a boundary with Hung Kiu San Tsuen. A 40m section of 3m high barrier is positioned to the east of the roundabout on the boundary of A1-11, a second 45m long section is located on the south side (riverside) of the bypass commencing 50m along the carriageway after the junction with the roundabout. Running parallel with the 3m high noise barrier on the south side of the road, a shorter 3m high section will run for approximately 50m, just after the roundabout.

A further 5m section of noise barrier will run for 130m to the west of Wa Shan together with an 80m section of cantilevered barrier (5m high plus 3m inclined) prior to the proposed roundabout junction with the eastern section of the bypass.

The majority of the proposed road alignment is set away from the main Sheung Shui urban areas to the south however; prior to the junction with DP 10 the alignment comes close the residential areas of Tin Ping Shan Tsuen and Shek Wu San Tsuen.

The proposed general layout and extent of noise barriers works is presented on **Figure 12.52.72**.

DP 10 – Fanling Bypass Eastern Section

This DP also interfaces with the northern extent of the FLN NDA boundary. At the junction between the western and eastern section of the bypass a roundabout will be formed approximately 80m in diameter. From this roundabout the by-pass then forms a dual carriageway with central reservation approximately 20m wide constructed on a viaduct. The northern side of the road will have a 3m high noise barrier running for approximately 330m.

Prior to Ng Tung River joining with Ma Wat River, a bridge crossing carries the road alignment south. Half-way across the bridge a 5m high noise barrier will be erected on the northbound parapet and will run for around 120m before changing to a 5m high with 3m inclined canopy noise barrier which will run for around 200m. The road is at grade within this section.

The proposed road follows the alignment of Ng Tung River for a short section, locally this landscape appears much less developed and rural in nature with scattered dwellings and more extensive agricultural plots. Beyond the river corridor where more open views of the wider mountain landscape are experienced; the agricultural areas are low lying and well wooded which encloses potential views. The proposed road crosses Ng

Tung River to the west of Kan Lung Tsuen and heads south towards the Sheung Shui industrial area, broadly following the alignment of Ma Wat River. The river is lined with well established woodland areas containing mature tree planting which helps to break up the appearance and extent of village areas to the east of the river.

As the bypass reaches the intersection with Sha Tau Kok road it will be in cutting and pass beneath the existing road. An at-grade roundabout will be formed above the intersection of the two roads connecting them with slip roads. Above the roadabout a pedestrian footbridge links footpaths on either side of the road.

Proceeding south the bypass comes out of cutting and crosses the present alignment of the Ma Wat River. A section of the existing channelised river channel approximately 600m long will be realigned by 100m to the east towards Wing Ning Tsuen and Ma Wat Wai. A 50m section of 5m high noise barrier runs parallel to a 70m section of 5m high with 3m cantilever barrier on this part of the bypass.

The alignment of the bypass remains on viaduct as it heads south following the outer edges of the Fanling industrial area and crossing the river channel at three more points. A 45m section of 4m high noise barrier will be located on the eastern side of the carriageway as it passes Shung Him Tong. To the east of the bypass local villages areas appear within a lush green landscape with undulating topography and mature landscape planting, the industrial area is dominated by generally 6-storey factory buildings, access roads and car parks.

At the southern extent of the Fanling industrial area, the alignment of the bypass will require the demolition of a single factory unit located off Yip Wo Street. From this point the highway continues south and splits into two viaducts to the west of Cyber Domain and then crosses the MTR East Rail Line corridor and Ma Wat River Channel. These viaducts connect the bypass to the northbound and southbound Fanling Highway. A series of 5m high and 5m plus 3m cantilever noise barriers are positioned within the Fanling Highway corridor and along Tai Wo Service Road West. In addition a 66m section of 5m high noise barrier is located on Wo Hing Road to the north of Wo Hop Shek San Tsuen. The landscape in this area opens up considerably into the valley formed by Kei Lak Tsai Mountain and Lung Shan Mountain.

As the southbound section of the bypass joins the Fanling Highway to the west of Yuen Leng a series of 5m high, 5m high with 3m cantilever and 4m high noise barriers run along the eastern side of the Highway. A 7m high noise barrier runs for 200m alongside the slip road of the bypass.

The level ground at the bottom of the valley has been widely developed, most extensively by the Fanling Highway, MTRC East Rail corridor and engineering works to channelise Ma Wat River. Whilst dramatic and highly scenic views are available to the surrounding landscape, many short distance views are of disturbed and developed landscape. Tree planting along the alignment of the Fanling Highway is well established and almost screens the entirety of this major infrastructure corridor.

The proposed general layout and extent of noise barriers works is presented on **Figure 12.52.73 & 75**. Sections demonstrating the construction of the viaducts and vertical alignment are provided on **Figure 12.52.84, 85 & 86**.

DP12 – Reprovision of temporary wholesale market in FLN NDA.

The DP involves the reorientation of the existing temporary wholesale market as a result the works to construct DP10 which passes through the existing site. The alignment of Ma Wat River channel forms the boundary to the eastern side with the remaining boundary formed by the Sheung Shui industrial area. The existing market comprises a large expanse of hard standing accessed of On Kui Street. There are no permanent structures or buildings within the site which is entirely level. The majority of the boundary contain planting although the quality and extent is lower along the interface with the industrial area.

The villages of Ma Wat Tsuen and Wing Ning Wai sit just beyond the site boundary across the river channel at a slightly lower ground elevation. Visual connection between these areas is generally restricted to the frontages of the village and where gaps have formed in the existing tree planting on the site boundary. To the west of the site, beyond the industrial area, the high rise residential towers of the Belair Monte and Grand Regentville developments peer into the site. There is a strong visual connection to the mountain backdrop of Kat Tsai Shan Au from within the site.

The precise details of the development at this stage are not confirmed however the facilities would include temporary style stalls (i.e. moveable) of approximate 2-3m height. The number of stalls would vary depending on seller requirements; this cannot be ascertained at this time. The majority of the facility is the creation of flexible open space/hardstanding to accommodate these facilities. Perimeter security fencing approx. 2.5m high to replace the existing would be provided together with an access booth for security personnel.

The proposed general layout and extent of noise barriers works is presented on **Figure 12.52.73**.

12D.11.2 Visual envelope

The visual envelope (VE) for these DPs is generally shared with that of the FLN NDA project although this area has been extended to incorporate the Po Shek Wu Interchange improvements and the southern section of the Fanling Bypass eastern section. Generally the viewshed is confined to the north and east by the ridgeline formed by the summits of Cheung Po Tau, Cham Shan, Wa Shan and reaching across to the more distant and easterly Tsung Shan and Mau Tau Leng summits. To the south east the foothills of Lung Shan contain the view while to the southern and

western side the VE is contained by the high-rise development of Fanling / Sheung Shui.

12D.12 Sensitivity of VSRs/VPs

Table 12D.12.1 below details the VSRs/VPs in relation to the DPs and describes their overall sensitivity. This information is also presented on the following figures:

Figures 12.53.2 VP locations

Figures 12.54.1 to 26 provide representative photographic records from location within each VSR, looking towards the relevant NDA and the DPs. Since special access could not be gained for all VSRs, especially for private residential developments, the representative viewing locations may have been adjusted if necessary. The selected viewing point is considered the best alternative that represents the typical view of the VSRs.

Figures 12.55.8a to 12.55.19b provide representative photomontages showing the predicted view from selected viewpoints depicting existing conditions, Day 1 of Operation Phase without Mitigation Measures, Day 1 of Operation Phase with Mitigation Measures and Year 10 of Operation Phase with Mitigation Measures.

Table 12D.12.1 – VSRs and their sensitivity (DP 8, 9, 10 and 12)

VSR Code	Name	Category of VSR (Strategic / District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
	Description of Existing View										
FVP1	Po Shek Wu Road adjacent Tai Tau Leng	Local	Pedestrian, Residential Travelling.	0	Very Many	Poor	Yes	Full	Short	Very Frequent	Medium
	Ground level roadside view experienced by pedestrians and motorists using Po Shek Wu Road. Residential views from adjacent village area are restricted due to intervening planting; some glimpsed views are possible through screen vegetation. The road infrastructure dominates the foreground with longer distance views comprising high rise residential towers. Mature tree planting provides valuable visual amenity and screens low level views to/from adjacent high rise residential estates. High-rise residential tower blocks together with the large expanse of road reinforce the urban identity of this view.										
FVP2	Residential tower, Choi Po Court, Choi Ying House	District	Residential	100	Very Many	Good	Yes	Full	Long	Very Frequent	High
	Elevated view from residential tower block provides a panorama view across the western Sheung Shui area. The combination of the large scale buildings in the Sheung Shui industrial zone, MTR East Rail corridor, villages and comprehensive development areas form a strong urban character. The canopies of mature trees throughout the zone help to break up the appearance of built form and provide a green link to the dramatic mountain scenery in the background.										

VSR Code	Name	Category of VSR (Strategic / District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
	Description of Existing View										
FVP3	Pedestrian footbridge, San Wan Road	Local	Pedestrian, travelling	180	Many	Poor	Yes	Partial	Short	Frequent	Low
	View from pedestrian bridge crossing and looking back along the MTR East Rail Line corridor towards the Sheung Shui urban area. High rise residential and commercial development within Sheung Shui limits long distance views. Open air car parking, the MTR rail corridor and industrial functions are detractors in the view. The canopy of mature trees forming boundary planting around the car park and the embankments of the elevated Po Shek Wu Road assist in breaking up the appearance of built form.										
FVP6b	Highpoint above Fu Tei Au Tsuen, facing east.	District	Recreational	400	Few	Good	Yes	Full	Short	Occasional	Medium
	View from high point above Fu Tei Au Tsuen facing east towards Sheung Shui and Fanling provides a panorama view across the local landscape incorporating numerous villages and agricultural land. The channelized Ng Tung River is a dominant feature in the view as it winds through the level terrain in the middle ground. The development pattern and scale of the village areas creates a strong contrast with the high-rise urban areas. The open storage area located between Fung Kai Secondary School and Man Kam To Road is a significant visual detractor within the view. Stacked container boxes throughout this area are highly visible.										

VSR Code	Name	Category of VSR (Strategic / District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
	Description of Existing View										
FVP8	Access road adjacent Ng Tung River, west of Wa Shan	Local	Recreational	50	Many	Fair	Yes	Partial	Short	Frequent	Medium
	<p>Typical view from access path running parallel to Ng Tung River to the west of Wa Shan Tsuen.</p> <p>The river corridor allows open uninterrupted views through the local area towards high rise residential tower such as Belair Monte and the mountains in the background.</p> <p>Mature tree cover along the boundary of the path (on both sides of the river) screens the appearance of the smaller scale village type developments and surrounding agricultural land, only the high rise built form within the Sheung Shui / Fanling urban areas is visible.</p>										
FVP9	Access track, Sheung Shui Wa Shan	Local	Residential Occupational	125	Few	Fair	Yes	Glimpse	Long	Frequent	Medium
	<p>Typical view experienced from within the Sheung Shui Wa Shan area.</p> <p>The gently sloping terrain and intervening mature vegetation cover forms a comprehensive screen between the village area and Ng Tung River and subsequent urban area of Sheung Shui making outward views difficult.</p> <p>Glimpsed views of mountains and ridgelines within Lam Tsuen Country Park can be seen above the tree line.</p> <p>Land uses within this area are varied; parking, hard standing and smaller commercial units detract from the overall visual quality.</p>										

VSR Code	Name	Category of VSR (Strategic / District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
	Description of Existing View										
FVP10	Access road, south of Sheung Shui Wa Shan.	Local	Travelling	65	Few	Fair	Yes	Full	Short	Frequent	Low
	<p>Typical view from access road to the south of Sheung Shui Wa Shan, the land use changes to several small agricultural plots which form a border with Ng Tung River access road.</p> <p>The openness of the river corridor allows clear views across to Sheung Shui urban area and the mountain backdrop.</p> <p>The mature tree planting along Ng Tung river helps to screen views towards the river channel; glimpsed views of the engineered river banks and access paths/ramps can be seen below the tree canopies.</p>										

VSR Code	Name	Category of VSR (Strategic / District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
	Description of Existing View										
FVP13 (F20)	High Rise Residential buildings around Tin Ping Estate	District	Residential - High Rise	390	Very Many	Good	No	Full	Long	Very Frequent	High
	<p>Typical view experienced by residents on the upper floors of the Ting Pin Estate; similar views would be experienced by residents of neighboring developments such as Woodland Crest.</p> <p>For those flats in this area facing north east, at high levels the view is generally open and panoramic. Some blocks will have their views north east partially blocked by the towers of Noble Hill and high rise developments are evident in the foreground to middle distance.</p> <p>Ng Tung River is a dominant visual component which runs through the center of the view along the level valley floor surrounded by a rural landscape of agricultural fields, small villages and extensive woodland.</p> <p>There is a strong visual contrast between the high rise residential towers in the view and the low scale village type development scattered through the valley floor.</p> <p>The back drop to the view is formed by numerous mountains including Tsung Shan and Lung Shan.</p>										

VSR Code	Name	Category of VSR (Strategic / District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
	Description of Existing View										
FVP14	Footbridge north of Wu Nga Lok Yeung	Local	Pedestrian, Recreational	90	Few	Fair	Yes	Partial	Short	Occasional	Medium
	<p>Typical view experienced by pedestrians using local footpaths along Ng Tung River leading to the Chan Shan and Ting Ping Shan areas from the southern side of Ng Tung River, close to Wu Nga Lok Yeung.</p> <p>A small wooded hill in the middle ground creates a strong focal point which is strengthened by the surrounding mature and semi-natural vegetation cover.</p> <p>Village type development and agricultural plots on the opposing bank of the river is well concealed.</p> <p>Glimpse views to mountain peaks and ridgelines can be seen above the tree canopy.</p>										
FVP15 (F4)	Siu Hang San Tsuen	Local	Residential - Low Rise	200	Few	Good	No	Partial	Long	Very Frequent	High
	<p>Typical view from southern extent of the village of Siu Hang San Tsuen.</p> <p>As a result of local topography and vegetation cover, views from this point are very open.</p> <p>Ground level views are across agricultural fields on the opposing side of the Ng Tung River.</p> <p>The high-rise buildings of the Sheung Shui / Fanling urban area are clearly visible in the middle distance serving as a backdrop to this rural area.</p>										

VSR Code	Name	Category of VSR (Strategic / District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
	Description of Existing View										
FVP16 (F11)	Belair Monte & Regentville	District	Residential - High Rise	70	Very Many	Good	No	Full	Long	Very Frequent	High
	<p>Typical view from high rise residential tower; there are a number of high rise residential buildings in this vicinity including Belair Monte and Regentville with similar views.</p> <p>Views at ground level are blocked by buildings and existing vegetation whereas apartments at elevated levels and facing north will have direct views towards the DP and wider landscape setting.</p> <p>The current view north is very rural and green in nature, with agricultural land interspersed with houses and small village areas and parts of Ng Tung River channel also visible</p> <p>In the background the green Tsung Shan and Wa Shan hills are evident with wooded lower slopes leading to shrub land near the summits.</p> <p>High rise buildings in Shenzhen are also visible in the far distance.</p>										
FVP17	Bridge over Ma Wat River, Sha Tau Road.	Local	Travelling,	100	Many	Fair	Yes	Partial	Short	Frequent	Medium
	<p>Typical view on approaching the Fanling urban area from Sha Tau Kok Road.</p> <p>Mature tree and amenity shrub planting helps to reduce the appearance of built form and create a formal / municipal style landscape character.</p> <p>High rise developments such as Grand Regentville appear above the tree line.</p> <p>Long distance views area limited by tree cover and intervening built form.</p>										

VSR Code	Name	Category of VSR (Strategic / District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
	Description of Existing View										
FVP18	Road Junction west of Ning Wai & Wing Ning Tsuen	Local	Residential, Pedestrian	30	Many	Fair	Yes	Partial	Long	Frequent	High
	<p>Typical view from properties fronting the villages of Ning Wai and Wing Ning Tsuen which look directly over Ng Tung River towards the existing wholesale market site.</p> <p>As a result of breaks in vegetation cover and neighboring land uses the view is relatively open.</p> <p>A clear view towards Grand Regentville and Belair Monte residential developments is possible.</p> <p>Temporary cabins, market stalls and canopies can be seen within the market site.</p> <p>Long distance views are generally limited by the local woodland cover.</p>										

VSR Code	Name	Category of VSR (Strategic / District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
	Description of Existing View										
FVP19 (F9)	Agricultural plots, Ma Wat Wai.	Local	Recreational	600	Few	Fair	Yes	Partial	Medium	Occasional	Medium
	<p>Views along the Heritage trail change along the route but generally to the west, in the direction of the DPs, they extend over a rural landscape of agricultural fields to Ma Wat River Channel in the foreground with Lung Shan mountain range visible to the south east.</p> <p>Looking north, the natural uplands of Wa Shan and Tsung Shan are in the background.</p> <p>The trail is predominantly along low lying ground and at certain points the large medium-rise commercial/ industrial area near On Lok Tsuen is visible, as is Sha Tau Kok Road, but these are often blocked by vegetation and other village structures.</p> <p>The high-rise buildings of Sheung Shui / Fanling urban area are also visible in the background at certain points along the route.</p> <p>In general views along this trail are mixed being largely rustic at close range and taking in ancient buildings, but with elements of urban development clearly evident in the middle to far distance.</p>										
FVP20 (F8)	Access road, Shung Him Tong	Local	Residential - Low Rise	475	Very Few	Fair	No	Glimpse	Long	Frequent	Medium
	<p>Views from Shung Him Tong north west extend over Ma Wat River Channel to the medium rise commercial / industrial area at On Lok Tsuen. The view is partially screened by existing vegetation in the foreground.</p> <p>High rise residential buildings such as Grand Regentville are clearly visible above the vegetation.</p> <p>To the north, the uplands of Wa Shan and Tsung Shan can be seen.</p>										

VSR Code	Name	Category of VSR (Strategic / District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
	Description of Existing View										
FVP21	Highpoint within On Lok Tsuen	Local	Residential	50	Few	Fair	No	Partial	Long	Frequent	High
	<p>In general, views out of this area are limited to highpoints or upper floors of buildings as low level views are screened by dense and mature woodland which covers a large proportion of this lowland hillside area.</p> <p>The views out generally comprise a wall of urban development formed by the Fanling Industrial zone and high rise residential development which appears above the industrial roof line.</p> <p>The dense and mature vegetation in the foreground of the view creates a robust buffer between this land and adjacent urban uses, also creating a strong visual contrast between natural landscape and large scale urban form.</p>										
FVP22	Bus stop, Cyber Domaine residential estate	Local	Residential, pedestrian, travelling.	70	Many	Good	Yes	Full	Long	Frequent	High
	<p>Typical view from street level at the front of the Cyber Domaine residential area.</p> <p>The views from this area are generally open as the landscape between the estate and the Fanling Highway, in the middle ground, has relatively little vegetation cover and is predominantly level.</p> <p>Mature tree planting on the embankments along the Fanling Highway almost completely screen the highway.</p> <p>Residential high-rise development within the Dawning Views Estate and Avon Park Estate are dominant elements of the view.</p> <p>The ridgeline of Lam Tsuen Country Park from the backdrop can also be seen.</p>										

VSR Code	Name	Category of VSR (Strategic / District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
	Description of Existing View										
FVP23	Pedestrian footbridge, Kau Lung Hang San Wai	District	Residential, Pedestrian, travelling.	100	Many	Good	Yes	Full	Long	Frequent	High
	<p>Typical view experienced from the south east of Fanling, looking back up through the Fanling Highway and MTR East rail corridor from residential village area of Kau Lung Hang San Wai.</p> <p>Dense and mature tree planting on the embankments of the Fanling Highway almost completely screen this major piece of infrastructure.</p> <p>The undulating hillside terrain on either side of this low valley promotes a strong rural feeling.</p> <p>This floor of the valley has undergone significant visual and physical change as a result of the Fanling Highway development, MTR East rail line and major channelisation of Ma Wat River.</p> <p>Service roads, drainage channels and randomly development plots within the middle ground detract from the quality of the view.</p>										
FVP24	Wo Hing Road, Wo Hop Shek Village	Local	Residential, Occupational, pedestrian, travelling.	50	Many	Fair	Yes	Partial	Long	Frequent	High
	<p>This VP demonstrates the view in front of the Wo Hop Shek Village from Wo Hing Road.</p> <p>Dense and mature vegetation in the foreground creates a robust screen between this area and the Fanling Highway interchange slip roads and viaducts.</p> <p>Glimpse views over this planting to the mountains and ridgelines of Lung Shan provide valuable visual amenity.</p>										

VSR Code	Name	Category of VSR (Strategic / District/ Local)	Type of VSR	Approximate Closest Viewing Distance (m) to Proposed Schedule 2 DP	Number of Individuals (Very Many / Many / Few / Very Few)	Quality of Existing View (Good / Fair / Poor)	Availability of Alternative Views (Yes / No)	Degree of Visibility (Full / Partial / Glimpse)	Duration of view (Long, Medium, Short)	Frequency of View (Very Frequent / Frequent / Occasional / Rare)	Sensitivity (Low, Medium, High)
	Description of Existing View										
FVP25	Residential Block, Wah Sum Estate	District	Residential	515	Very Many	Good	Yes	Full	Long	Very Frequent	High
	<p>This VP demonstrates the typical view from residential towers located at the Wah Sum Estate and its immediate vicinity. The elevation allows for an unobstructed view through the valley to the south east of Fanling and along the infrastructure corridor formed by the MTR East Rail Line and Fanling Highway. The mountainsides of Lung Shan and Kau Lung Hang Shan dominate the view. Villages and isolated developments occupy a large percentage of the valley floor.</p>										

Remarks: The *approximate closest viewing distance to the proposed DP* is measured from the edge of the VSR group to the closest building proposed within the DP.

12D.13 Visual Impact Assessment

The potential sources of visual impact due to the Project are described in **Section 12D.4 and 5**. They will create varying levels of visual impact during the construction and operation phases in relation to each DP, due to factors such as obstruction of views, degradation of the quality of existing views and visual incompatibility with the surrounding landscape context. The visual impact assessment will consider each DP individually.

12D.13.1 Magnitude of Visual Change

The magnitude of visual change is largely dependent on a number of factors as outlined in the methodology. In general, the magnitude of change will reduce the further a VSR is from the Project.

Detailed engineering design of built elements the DPs is ongoing at this stage therefore, the structures shown in the photomontages may change as detailed design is refined.

Table 12D.13.1 details the magnitude of change in relation to DPs 8, 9, 10 and 12.

Table 12D.13.1- Magnitude of visual change for VSRs - DPs 8, 9, 10 and 12

Remarks: The approximate closest viewing distance to the proposed DP is measured from the edge of the VSR group to the closest built structure.

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
	FVP1	Po Shek Wu Road adjacent Tai Tau Leng.	Local	DP8	Full	0	Large	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Large	Large
		<p>The construction of a fully enclosed acoustic barrier, approximately 6m high, combined with an elevated viaduct structure approximately 14m high (to top of enclosure) above will obstruct the entirety of this view and prevent any medium to long distance views from pedestrian level.</p> <p>At ground level only small sections of the new structure will be visible at any one time however for elevated views from upper storeys of local buildings a more entire view of the whole structure will be possible.</p> <p>Whilst this development will be within an existing road corridor, it is considered the height and extent of new above ground structures will create a considerable change in the view, in particularly during construction where extensive temporary works will be required therefore, it is considered that the compatibility during construction would be poor. The present 4 (in part 5) lane road is very busy and an existing visual detractor, given this function and the neighbouring industrial and rail infrastructure landscapes the compatibility of the DP in operation is considered to be fair.</p> <p>In general, views from this VSR will experience full blockage by the proposed DP. The scale of development is considered to be large taking into account the size and height of the proposed structure.</p> <p>Overall the magnitude of change is predicted to be large during construction as the temporary works are likely to be extensive. In operation the magnitude of change is also considered to be large as this significant new structure will be largely unscreened.</p>													
Y	FVP2	Residential tower, Choi Po Court, Choi Ying House.	Strategic	DP8	Partial	100	Large	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Large	Large
		<p>The construction of a fully enclosed acoustic barrier, approximately 6m high, combined with an elevated viaduct structure approximately 14m high (to top of enclosure) above will appear over the entire section of Po Shek Wu Road leading up to the crossing point of the MTRC East Rail Corridor where the enclosure terminates and the viaduct drops down to the deck level of the existing bridge and then crosses over the MTRC East Rail corridor. The viaduct joins to the eastern side of the bridge forming an additional two lanes.</p> <p>Elevated views from neighbouring high-rise developments will experience a more comprehensive view of the height and extent of these structures together with their roofscape. The widening of the existing bridge of the rail corridor will also increase the visibility of engineered structures.</p> <p>Beyond the existing bridge the additional road lanes converge with the existing road alignment however, some tree losses on the eastern side will be required to form the slip roads.</p> <p>Whilst the DP sits within an existing road corridor, the proposed above ground structures are very different to the existing type of road development in form and height and will greatly increase the visual presence of the road, constituting a large change in the view especially during construction therefore the compatibility is considered to be poor at this stage.</p> <p>The existing 4-5 lane road is very busy and an existing visual detractor, given this function and the context of neighbouring industrial and major infrastructure landscapes the compatibility of the DP in operation is considered to be fair, in addition the enclosures will help block views of traffic.</p> <p>Overall the magnitude of change is predicted to be large during construction and large during operation.</p>													

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)		VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
		Name						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
	FVP3	Pedestrian footbridge, San Wan Road	Local	DP8	Partial	180	Small	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Large	Intermediate
		<p>The construction of a fully enclosed acoustic barrier, approximately 6m high, combined with an elevated viaduct structure approximately 14m high (to top of enclosure) above will appear to the right hand side of the bridge in the centre of the view. The full enclosure of the road terminates prior to the bridge crossing however; the elevated viaduct above the lower enclosure will taper down to meet the bridge level at the threshold to the crossing point. The viaduct joins to the eastern side of the bridge forming an additional two lanes, this is the other side of the bridge when viewed from this position.</p> <p>Existing tree planting on either side of the bridge is likely to screen low level views of new structures as it already provides a robust screen in relation to the road therefore the full scale of the proposed DP would not visible from this point.</p> <p>Whilst the DP sits within an existing road corridor and would be seen in the context of the rail corridor and industrial setting, the proposed above ground structures are very different to the existing type of road development in form and height. It is considered this will greatly increase the visual presence of the road and bridge crossing, creating a relatively large change in the view especially during construction therefore the construction stage compatibility is considered to the poor, reducing to fair in operation.</p> <p>Overall the magnitude of change is predicted to be large during construction as temporary works are likely to extensive and intermediate during operation as the majority of the works will be screened by intervening vegetation.</p>													
Y	FVP6b	Highpoint above Fu Tei Au Tsuen, facing east.	District	DP9	Partial	400	Medium	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Large	Intermediate
		<p>The construction of the Fanling Bypass Western Section would commence in the middle-ground of this view to the north of the road bridge crossing Ng Tung River. At this point a roundabout will be formed to create a junction with the Man Kam To Road which will require an extensive area of lowland woodland to be felled which will open up views along the new road corridor. A pedestrian footbridge bridge would be constructed over the roundabout.</p> <p>Beyond the woodland the road corridor would pass through an area of open storage with some small woodland areas.</p> <p>The road at this point will comprise two lanes (total 7.5m width) running broadly parallel (not adjacent) to Ng Tung River. The first 200m (approx.) will include a 5m high vertical noise barrier on the north side of the road forming a boundary with Hung Kiu San Tsuen. Running parallel with the 3m high noise barrier on the south side (riverside) of the road, a 3m high section will run for approximately 50m, just after the roundabout. There are no further noise barriers visible along this section.</p> <p>As the road continues east, away from this view, it veers towards Ng Tung River and starts to follow the curve of the channel, the road would then gradually disappear from view after approximately 600m as existing woodland cover along the river channel would start to screen the view.</p> <p>Whilst landscape within the alignment has been previously disturbed through open storage functions, the road will introduce a completely new type of development into this zone requiring the removal of numerous tree groups which during construction would constitute a large change in the view.</p> <p>In terms of compatibility, the highly engineered channel of Ng Tung River provides a precedent for large scale engineered linear forms within the landscape, albeit that the river is not a transport corridor. It is considered that as the new road is situated close to this existing feature that this would make the new road appear less alien within the landscape setting. However, the road in combination with the river channel would create a wide corridor of engineered linear forms which would make these features even more conspicuous, especially within the more natural appearance of the landscape to the north of the river. In this case the compatibility during construction is considered to be poor given the likely footprint of construction works; during operation the compatibility would become fair as the footprint reduces and only short sections of the road can be seen at any one time, due to the curved alignment.</p> <p>Given the panoramic nature of this view comprising numerous elements and a large scale backdrop, the scale of the development in the view is considered to be medium.</p> <p>The magnitude of change is considered to be large during construction and intermediate in operation.</p>													

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)		VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
		Name						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
	FVP8	Access road adjacent Ng Tung River, west of Wa Shan	Local	DP9	Partial	50	large	Poor	Poor	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<p>The Fanling Bypass Western Section runs parallel to the riverside access road at the east. The road corridor including the pedestrian footpaths on either side would be around 25m wide at this point. In order to construct the bypass, tree felling will occur throughout the proposed alignment which will open up direct views to the road corridor along this route. In addition a pedestrian footbridge will be constructed over the road which would appear above the tree line.</p> <p>The road alignment continues parallel to the river channel throughout this view until it follows the river around the bend and out of view. The existing line of trees which run directly parallel to the access road provide intermittent screening, in addition the route is slightly elevated compared to the adjacent ground level which may increase the visibility into the centre of the road scheme.</p> <p>200m along the road from this point, on the north side (far side) of the bypass, there will be a 200m long section of 5m high noise barrier. This barrier would be visible in front of the small hill in the middle ground of this view. It is likely that partial views of the upper sections of these barriers would just be visible above the tree canopies on the access road.</p> <p>Vegetation that would be removed within the proposed road alignment currently screens the developments beyond. This function would be compromised resulting in increased visibility through this area in addition to views of a new road. It is considered that this development would have a poor compatibility with the existing view during construction and operation due to the scale of the construction footprint.</p> <p>The visibility of the proposed road would be restricted as a result of existing tree cover; in addition the curved alignment limits the extent of the view. In this case the magnitude of change is considered to be intermediate in both construction and operational stages.</p>													
	FVP9	Access track, Sheung Shui Wa Shan	Local	DP9	Partial	125	Medium	Fair	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
		<p>The Fanling Bypass Western Section would pass this VSR approximately 125m at the southwest; the road corridor inclusive of pedestrian footpath would be around 27m wide. The additional width relates to a new bridge and road junction (not part of the DP) which connects to the bypass at this point.</p> <p>The typical view at ground level is contained by tree and shrub planting in the foreground therefore, direct views of the DP are not considered to be possible; this is the case throughout the immediate area. Views from upper floors of village houses are likely to have partial views of the development as this area is elevated above the proposed road corridor providing the opportunity for more direct views. The higher the viewing elevation, the more of the road corridor would be visible.</p> <p>Whilst the road corridor would be generally obscured by intervening vegetation, a 200m section of 5m high noise barrier located approximately 180m to the south of this point (left hand side of the view) would become visible from upper floor of local buildings. It is likely only the upper section of the barriers would be visible.</p> <p>As the majority of the development in this area is low rise and extensive views over the road corridor are limited by vegetation and topography, it is considered that the compatibility of this development with the existing view would be fair in construction and operation.</p> <p>The magnitude of change therefore, is considered to be intermediate during construction and in operation.</p>													

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)		VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
		Name						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
	FVP10	Access road, south of Sheung Shui Wa Shan.	Local	DP9	Partial	65	Large	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Large	Large
		<p>The Fanling Bypass Western Section would pass directly through the centre of this view on the near side of the line of trees visible in the middle ground. The route would run parallel to the alignment of the riverside path which can be seen beneath the tree canopy.</p> <p>The bypass would mainly replace agricultural land through this section with less tree felling required. As the view demonstrates, this area is wide open with minimal tree cover therefore direct and uninterrupted views of the development are possible.</p> <p>The road would comprise of two lanes in this location; the road from which this view is taken would also form a junction with the bypass and riverside road. The bypass including pedestrian footpaths is approximately 25m wide; the road would also be elevated on embankment at the same height as the riverside access road.</p> <p>There is no noise barrier proposed within the section so views would continue over and beyond Ng Tung River.</p> <p>Whilst this area has already been cleared of vegetation for agricultural uses it still retains a rural character and separation from the high rise urban in the back ground of the view, in this case it is considered the compatibility of the development would be poor during construction due to the scale of the works area. In operation the compatibility would become fair as the visibility of construction operation/footprint reduces, the roadscape would also be seen next to the highly engineered form of Ng Tung River.</p> <p>As views towards the works area are completely unscreened and would occupy the entirety of the immediate foreground the magnitude of change is considered to be large both during construction and operation.</p>													

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)		VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
		Name						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	FVP13 (F20)	High Rise Residential buildings around Tin Ping Estate	District	DP9 and DP10	Partial	390	Large	Poor	Poor	Temporary [Medium]	Permanent	Reversible	Irreversible	Large	Large
<p><u>DP 9</u> The Fanling Bypass Western Section would appear at the west (from the left hand side of the view) running parallel to the Ng Tung river from this elevated location. The road corridor would be approximately 10m wide at this point. Tree felling would be required along the alignment in an area containing pockets of mature vegetation and agricultural land; this would open up views of the developed areas beyond the tree cover. There is no noise barrier or pedestrian bridge proposed on this section, all construction will be at-grade. Given the varying quality and density of existing planting along the riverside, intermittent views of the road through the planting is likely. Whilst there are relatively large areas of low scale development in this location, the overall picture is that of a rural and wooded lower hillside therefore, the compatibility of DP 9 at this point is considered to be poor both in construction and operation.</p> <p><u>DP10</u> Western section of the bypass joins with DP 10 Fanling Bypass Eastern Section at a roundabout near the second bridge at the northern bank of the river. The roundabout is approximately 80m across and will require an extensive area of tree felling, demolition of existing structures and alterations to existing levels and topography. From this roundabout the by-pass then forms a dual carriageway with central reservation approximately 20m wide. The northern side of the road will have a 3m high noise barrier running for approximately 330m. Views from this point will be able to look up through the alignment of the road corridor therefore increasing the overall visibility of the development. The road alignment will also pass through a well wooded area requiring extensive tree clearance works. Beyond the second river crossing visible in the centre of the view, Ng Tung River turns to the south at which point the by-pass crosses the channel on a new bridge (location marked on existing image for reference), just before the river joins with Ma Wat River, and then passes through an area of relatively open ground in front of Kan Lung San Tsuen. The bridge would be a highly visible and large structure in the view. Half-way across the bridge a 5m high noise barrier will be erected on the near-side parapet and will run for around 120m before changing to a 5m high with 3m inclined canopy noise barrier which will run for around 200m. The barrier will be seen crossing the open ground to the right hand side of the river in this view. Beyond the river crossing the acoustic barriers will screen views of the bypass however; the barriers would be a highly visible linear element in the landscape. In the case of both DP9 and DP 10, a large proportion of the works area would be visible including significant structures such as the bridge crossing and extensive noise barrier works. The combined works area will span the entire view and introduce a series of large scale engineered structures into a relatively low scale and open landscape setting; as a result it is considered that the compatibility of the development would be poor in construction and operation. The magnitude of change, therefore, is considered to be large during construction and large during operation.</p>															

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)		VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
		Name						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
	FVP14	Footbridge north of Wu Nga Lok Yeung	Local	DP9 and DP10	Partial	90	Large	Poor	Poor	Temporary [Medium]	Permanent	Reversible	Irreversible	Large	Large
		<p><u>DP9</u> The Fanling Bypass Western section would be visible from the west to east (to the left hand side of the footbridge) on the opposing riverbank; it would appear as a 10m wide road corridor running parallel to the river channel set back by around 20m from the line of existing trees. There are no noise barriers or pedestrian bridges on this section of DP9. The proposed bypass would be at a similar ground elevation at this point therefore views of the road surface are likely to be restricted. The most noticeable change would be that the tree felling required for the route alignment would open up views deeper into the developed areas beyond.</p> <p><u>DP10</u> Directly across the footbridge on the opposing side of the river, the western by-pass joins with DP 10 Fanling Bypass Eastern Section at a roundabout. The roundabout is approximately 80m across and will require an extensive area of tree felling, demolition of existing structures and alterations to existing levels and topography. From this roundabout the by-pass forms a dual carriageway with central reservation, the approximate width is 20m. The northern side of the road will have a 3m high noise barrier running for approximately 330m. Views along this road corridor will be possible. To the east, further along Ng Tung River, the channel turns to the south. At this point the eastern by-pass crosses the channel on a new bridge (location marked on existing image for reference), just before the river joins with Ma Wat River. The bridge would be a highly visible and large structure appearing above the existing crossing point which can be seen in the view. Half-way across the bridge a 5m high noise barrier will be erected on the near-side parapet and will be visible above the channel. The extent of the barrier visible will be restricted by tree cover as the bridge and bypass continue out of the view to the right hand side. In the case of both DP9 and DP 10, a large proportion of the works area would be visible, including significant above ground structures, such as the bridge crossing and extensive noise barrier works. As a result the overall compatibility during construction and operation is considered to be poor. The combined works area will span the entire view and introduce a series of large scale engineered structures into an area which appears undeveloped and relatively natural therefore, the magnitude of change is considered to be large during construction and operation.</p>													
	FVP15 (F4)	Siu Hang San Tsuen	Local	DP10	Partial	200	Medium	Poor	Poor	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Small
		<p>The alignment of the Fanling Bypass Eastern section would cross directly through the middle ground of this view. The ground elevation can be seen dropping away in the foreground; in this case lower level sections of the bypass will not be visible, in additional a belt of tree planting to the south of the village provides some screening. Directly in the centre of the view, beyond the first line of existing trees, the bypass crosses the Ng Tung river at which point the structure of the bridge would appear above the tree line. Half-way across the bridge a 5m high noise barrier will be erected on the far-side parapet and will be highly visible. The barrier will run for around 120m before changing to a 5m high with 3m inclined canopy noise barrier which runs for a further 200m. Over this distance the barrier and bridge will slowly taper out of view. Views from the upper storeys of local village houses in Siu Hang San Tsuen will have a more extensive and entire view of the bypass construction and the bridge formation. The views from this point are currently very open, over a level landscape. The new bypass will appear directly in the centre of the view, partially obstructing the current long distance vistas. It is therefore considered that the compatibility of the development in construction and operational stages would be poor. Given the long viewing distance and screening provided by vegetation to the south of the village the magnitude of change is considered to be intermediate during construction. In operation the bypass will sit low down within the landscape with an urban backdrop, slowly tapering out of view; as a result the magnitude of change in operation would be small.</p>													

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)		VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
		Name						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	FVP16 (F11)	Belair Monte & Regentville	District	DP10	Partial	70	Medium	Poor	Poor	Temporary [Medium]	Permanent	Reversible	Irreversible	Large	Large
<p>The Fanling Bypass Eastern section would start at the base of the small hill on the left hand side of this view, commencing with a roundabout approximately 80m across. The alignment of the road would then run horizontally across the centre of the view following the alignment of the Ng Tung River Channel. The bypass construction along this entire section is dual carriageway with a central reservation. The roundabout will require an extensive area of tree felling, demolition of existing structures and alteration to existing levels and topography. Tree felling will continue along the alignment of the road creating an open corridor of about 20m which would be visible across the landscape. The construction width of this corridor may require additional felling. The first 330m of the bypass leading from the roundabout will have a 3m high noise barrier on the far side, the upper section of the this structure may be visible from this point.</p> <p>Approximately 2/3 of the way across this view, the bypass crosses the Ng Tung River on a new bridge and the alignment follows the Ma Wat River Channel which approaches the viewpoint. From this angle the road alignment would be relatively well embedded into the existing tree/vegetation cover within this rural landscape however, where the highway bridge the river, the construction will become increasingly more visible. In addition, a 5m high noise barrier which runs from the midpoint of the bridge for around 120m before changing to a 5m high with 3m inclined canopy noise barrier which runs for a further 200m will be highly visible and add significant bulk to the structure from this angle. The bypass will run through the agricultural land on the right hand side of the image, on a viaduct initially, then returning to at-grade level. The viaduct deck level will be around 6m above adjacent ground level, the road will then move out of view from this point.</p> <p>Given the scale and visibility of the bypass in the view and taking into account the existing strong rural character and openness, the compatibility of the development in this location is considered to be poor both in construction and operation.</p> <p>Given the scale and likely high visibility of the highway, bridge and associated noise barriers the magnitude of change is considered to be large during construction and operational stages.</p>															
Y	FVP17	Bridge over Ma Wat River, Sha Tau Road.	Local	DP10	Partial	100	Large	Poor	Good	Temporary [Medium]	Permanent	Reversible	Irreversible	Large	Intermediate
<p><u>DP10</u></p> <p>The existing wide junction in the foreground will be reconfigured into a roundabout approximately 75m across and the alignment of the Fanling Highway Eastern section will pass beneath in cutting. A series of pedestrian walkways crosses the roundabout connecting to the footpaths on either side of the roundabout. The construction of the above ground structure would require minor tree clearance to the west of the roundabout (right hand side of the picture) however this would not open up any additional views.</p> <p>As a result of existing tree cover and surrounding urban development the extent of the view is limited, in addition the proposed above ground structures are generally in keeping with the existing urban setting. The scale of the roundabout is broadly similar to the existing junction and the bypass will be in cutting therefore it will not be visible. In this case it is considered the development would have a good compatibility with the existing visual setting during operation. In the construction stage it is considered the compatibility would be poor due to the likely scale of works required, in particularly the excavation required to sink the alignment.</p> <p>Given the likely large scale of the temporary works, the magnitude of change during the construction stage is considered to be large. As a result of the good compatibility of the development, mainly due to the concealment of the highway, the magnitude of change in operation is considered to be intermediate.</p>															

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)		VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
		Name						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	FVP18	Road Junction west of Ning Wai & Wing Ning Tsuen	Local	DP10 and DP 12	Partial	30	Large	Poor	Good	Temporary [Medium]	Permanent	Reversible	Irreversible	Large	Intermediate
<p><u>DP 10</u> The Fanling Bypass Eastern section will be in cutting throughout this view therefore will not be visible. In the centre of the view, to the right hand side of the existing residential towers, a series of pedestrian walkways will be visible associated with the new roundabout formed at the junction of Sha Tau Kok Road and Ma Sik Road. The construction of the above ground structure would require minor tree clearance to the west of the roundabout (right hand side of the junction) however this would not open up any additional views towards this area. It is likely that partial views into the road cutting from the upper storeys of village houses on the frontage of Wing Ning Tsuen would be possible due to close proximity. The overall width of the cutting and slip roads is approximately 40m at this point. It is considered that the above ground structures in this view are generally in keeping with the urban setting; in this case it is considered the development would have a good compatibility with the existing visual setting during operation. In the construction stage it is considered the compatibility would be poor due to the likely scale of construction works required, mainly due to the excavation required to sink the alignment of the by-pass.</p> <p><u>DP 12</u> The alignment of DP 10 requires that the existing Fanling Wholesale market, which is visible as the area of level ground in the centre of the view across the river channel, will require re-orientation. The existing site is presently completely open and surfaced with asphalt; there are also no permanent above ground structures. Half of the site will be taken by the bypass construction to the left hand side of the view and be re-provided to the north in between the current site and Sha Tau Kok Road. Some minor tree clearance will be required within the centre of the site however this will not open up any new views towards this area. Views from the upper floors of the house on the frontage of Wing Ning Tsuen will be able to look across the new area of hard standing where the intervening trees screen is broken. As the reprovision works will affect a relatively large area and will increase the visibility of hard standing from elevated views, it is considered the compatibility during construction would be relatively poor. As the market contains no permanent above ground structures and comprises of just temporary stalls and canopies, in addition to a large area of hard standing, the compatibility during operation is considered to be fair. Given the likely large scale of the temporary works for both of these projects, large scale excavation and the overall extent of the construction footprint, the magnitude of change during the construction stage is considered to be large. As a result of the good compatibility of the development, mainly due to the concealment of the highway and relocation of the market facilities broadly in the same location, the magnitude of change in operation is considered to be intermediate.</p>															
	FVP19 (F9)	Agricultural plots, Ma Wat Wai.	Local	DP10	Partial	90	Large	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Large	Intermediate
<p>The Fanling Bypass Eastern Section will pass through the mid-ground of this view (approx. 90m) in the place of the various sheds, buildings, trees and agricultural plots which can be seen across the open agricultural land in the foreground. The openness of the agricultural fields will allow a direct view of the bypass which will be on viaduct at this point. The viaduct will gradually increase in height from the right to the left of the view as the road comes out of cutting; the road deck level will be 7.6m above existing ground level. In addition to the viaduct structure, two sections of 5m high plus 3m inclined canopy noise barrier will be constructed on either side of the viaduct which will be clearly visible from this point. The longest section of the noise barrier runs for approximately 150m on the far side of the viaduct, the second section on the nearside runs for 50m and will be seen in front of the longer section. Given the openness and undeveloped nature of the view in the foreground, the compatibility of the works in construction would be poor, in operation the road would be seen with a large scape urban backdrop, as a result the compatibility would be fair. It is considered, due to the scale of the works, that the compatibility of the project during construction and operation will be poor. There will be a significant level of visual change in this location, therefore the magnitude of change is considered to be large during construction. Post construction the road will be seen with a large scale urban backdrop, as a result the magnitude of change would drop to Intermediate.</p>															

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)		VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
		Name						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
	FVP20 (F8)	Access road, Shung Him Tong	Local	DP10	Partial	120	Large	Poor	Fair	Temporary [Short]	Permanent	Reversible	Irreversible	Large	Intermediate
		<u>DP10</u> The Fanling Bypass Eastern Section will pass through the mid-ground, to the left hand side of this view (approx. 120m). The alignment will require the felling of trees and clearance of land within a 25m corridor. Intervening mature vegetation, in the foreground of the view, will break up the visibility of new structure from this point, including views from the upper storeys of village houses in the vicinity. The bypass will comprise a viaduct at around 7.6m above existing ground level. In addition to the viaduct structure, two sections of 5m high plus 3m inclined canopy noise barrier will be constructed on either side; glimpse views of these structures are likely between retained vegetation. The viaduct and associated noise barriers are likely to be partially screened by intervening vegetation and in this case the views from this point will not be fully obstructed with the bypass appearing more embedded with the local landscape. The construction works for the bypass are likely to be large in scale within an undeveloped rural area therefore the compatibility during construction is considered to be poor. As the majority of the structure is likely to be screened by intervening vegetation the compatibility is considered to be fair during operation, taking into account the further encroachment of urban development towards this VSR. Due to the anticipated scale of the works the magnitude of change is considered to be large in the construction stage; as the structure is likely to be partially screened by existing vegetation the magnitude of change will reduce to intermediate during operation.													
Y	FVP21	Highpoint within On Lok Tsuen	Local	DP10	Partial	60	Large	Poor	Poor	Temporary [Short]	Permanent	Reversible	Irreversible	Large	Large
		The Fanling Bypass will cross the middle ground of this view, approximately 60m away. The ground elevates away from the bypass at this point, the viewpoint elevation is approximately 34mPD whereas the road deck level will be around 11.2mPD therefore the view will overlook the road structure with potential direct views into the corridor and of the road surface. The bypass construction will be on viaduct throughout this section including a 45m length of 5m high noise barrier. Views will partially screened by the tree canopy immediately in front of this viewpoint. Extensive tree felling and site clearance works will be required within the construction corridor to form the road which will be approximate 20m wide at this location. In this case the extent of tree canopy within the view will be significantly reduced which will further expose the road corridor. The construction works for the bypass are likely to be large in scale within an undeveloped rural area therefore the compatibility during construction is considered to be poor. The road will encroach further into this well wooded location obstructing a significant proportion of the view therefore the compatibility in operation is considered to be poor. Due to the anticipated scale of the works the magnitude of change is considered to be large in the construction stage; although the bypass will have some screening it will dominate the immediate view therefore the magnitude of change during operation is considered to be large.													
Y	FVP22	Bus stop, Cyber Domaine residential estate	Local	DP10	Partial	70	Large	Poor	Poor	Temporary [Medium]	Permanent	Reversible	Irreversible	Large	Large
		<u>DP10</u> The Fanling Bypass Eastern section will run directly through the centre of this view, right to left, on a viaduct approximately 70m away. The viaduct is approximately 20m wide; it then splits into two slip roads which then continue south connecting to the north and south carriageways of the Fanling Highway. The bypass would run through open ground therefore would be highly visible; the elevation of the viaduct at road level would be around 7.6m above the adjacent ground level. There are no noise structures planned at this location. The viaduct structure will obstruct the entire middle ground of the view, removing the existing long distance vistas to the woodland cover around the Fanling Highway. The residential towers of Dawning Views and hillside beyond would remain above the structure. The construction works for the bypass are likely to be large in scale within an open and undeveloped rural area therefore the compatibility during construction and operation is considered to be poor. The structure will be highly visible and occupy a large proportion of the existing view therefore the magnitude of change is considered to be large during construction and large in operation.													

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
								Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	FVP23	Pedestrian footbridge, Kau Lung Hang San Wai	District	DP10	Partial	100	Large	Poor	Poor	Temporary [Medium]	Permanent	Reversible	Irreversible	Large	Large
<u>DP10</u> At this point the Fanling Bypass Eastern Section forms a slip road connecting to the south bound carriageway of the Fanling Highway. The road would be on a viaduct at this point gradually tapering down to the level of the existing highway. The bypass slip lane is approximately 6.5m wide in this location. The bypass runs down the centre of the valley on the far side of the Ma Wat River and joins the highway to the left hand side of the view. Clearance of well-established woodland plantation associated with the Fanling Highway would be required, whilst this would not open up new views, it would reduce the overall appearance of woodland within this zone. The open view down through the valley would allow unobstructed views of a large proportion of the construction works for the bypass therefore the compatibility with the existing view is considered to be poor. Whilst the landscape within the valley floor has been highly disturbed as a result of the MTRC East Rail Line corridor, channelisation of the Ma Wat River and alignment of the Fanling Highway, the new bypass would be elevated and highly visible and introduce a large scale structure into a relatively open landscape, in this respect the compatibility of the project during operation is considered to be poor. The scale and extent of the bypass will be significant and highly visible, introducing a large new structure within a relatively open landscape therefore, the magnitude of change during construction and operation is considered to be large.															
Y	FVP24	Wo Hing Road, Wo Hop Shek Village	Local	DP10	Partial	50	Medium	Poor	Poor	Temporary [Medium]	Permanent	Reversible	Irreversible	Intermediate	Intermediate
The construction of the Fanling Bypass Eastern Section slip road connecting to the Fanling Bypass would be partially visible through the line of mature trees on the opposing side of the road. The slip road would be constructed on a viaduct elevated above the existing highway; the road would be approximately 10m wide. Tree clearance would be required on this section however this would occur on the other side of the Fanling Highway and would not affect views at this point. The existing mature trees and landform in the foreground would screen the majority of views of new structures. A section of 5m high noise barrier will run for 30m in front of Wo Hop Shek Village at ground level, this commences at the back of the pavement on the right hand side of the view and runs back along Wo Hing Road. Some tree clearance may be required to construct this section of barrier. An 80m long section of 5m high plus 3m inclined barrier will sit within the highway corridor and would not be visible from this point. Existing mature trees within the vicinity provide robust screening of the road corridor and will conceal the majority of view of the bypass during construction and operation. The proposed 30m noise barrier would be the most significant in views from this area. Taking into account that there are no similar structures to the barrier in the immediate vicinity, potential loss of existing trees and the overall height of 5m metres, it is considered that the compatibility would be poor during construction and operation. The noise barrier would be a highly visible new element within this environment as there would be no immediate screening available in addition to the potential loss of trees required to construct the barrier, in this case the magnitude of change in construction and operation is considered to be intermediate.															

VP (Yes [Y]/ blank)	VSR Code (Code for other NDA)		VSR Category (Strategic/ District/ Local)	Key Designated Projects (DPs)/ Sites with Structures causing Visual Impact (Land Use Type)*	Blockage of View (Full/ Partial/ Nil)	Approximate Closest Viewing Distance to Proposed NDA (m)	Scale of Development (Large/ Medium/ Small)	Compatibility with Surrounding Landscape (Good /Fair /Poor)		Duration of Impact (Temporary [Short/Medium term], Permanent)		Reversibility of Change (Reversible/ Irreversible)		Magnitude of Change (Large/ Intermediate/ Small/ Negligible)	
		Name						Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation
		Description of Impacts during Construction and Operation													
Y	FVP25	Residential Block, Wah Sum Estate	District	DP10	Partial	515	Large	Poor	Fair	Temporary [Medium]	Permanent	Reversible	Irreversible	Large	Intermediate
		<p>The construction of the two slip road tails of the Fanling Bypass Eastern section would appear to the rear of the residential tower on the left hand side of the view, approximately 515m from this point. The slip road forms a fork which joins to the north and south carriageways of the existing highway. The south bound connecting slip road (furthest from view) would be predominantly screened by existing mature vegetation along the Fanling Highway corridor, a short section would be visible where the bypass viaduct would cross the MTRC East Rail Line and Ma Wat River channel before being concealed.</p> <p>The northbound connecting slip road (nearside of the view) would be visible for a greater distance as it crosses the highway corridor obliquely before turning and running parallel to the highway prior to joining it. Both slip roads are approximately 10m wide and elevated on viaducts within open areas therefore would be highly visible.</p> <p>To the right hand side of the northbound connecting slip road, as soon as it crosses the highway corridor, an 80m long section of 5m high with 3m inclined noise barrier will run along the Fanling Highway. The upper section of this barrier would be visible above existing tree canopies.</p> <p>6no. individual sections of noise barrier (consisting of 5m high and 5m high plus 3m inclined barriers) are proposed to the east of Wo Hop Shek Village, parts of which would be visible before being screened by existing vegetation cover along the highway.</p> <p>In order to construct the above elements there would be tree losses within the woodland plantation associated with the Fanling Highway corridor therefore the overall tree cover in this view would be reduced and views of new and existing engineered structures would be increased. For this reason it is considered that the compatibility during construction would be poor. As the structures would be integrated with an existing major road corridor and given the sheer scale of this view the compatibility during operation is considered to be fair.</p> <p>The scale and visibility of the development during construction is likely to be very large and occupy a significant proportion of the view therefore the magnitude of change during construction is considered to be large. It is considered that the magnitude of change in operation would be intermediate as the project would be integrated into an existing major infrastructure corridor.</p>													

12D.14 Significance of Visual Impacts

Based on the sensitivity assessment of VSRs as described in **Section 12D.12** and the magnitude of change they might experience described in **Section 12D.13** the potential significance of the unmitigated visual impacts from DPs during the construction and operation are provided in **Table 12D.13.1** using the matrix given in the methodology, and taking into account site visits to the area.

Residual impact significance is also determined in this Section, considering the mitigation measures described in full in **Section 12D.9**.

Photomontages demonstrating the potential visual impact of the proposed project before and after mitigation from certain VPs are illustrated on **Figure 12.55.8a to 19b**.

Table 12D.14.1 - Significance of visual impacts for DP 8, 9, 10 and 12

VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	VSR Type	VSR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
FVP1	Po Shek Wu Road adjacent Tai Tau Lan.	Local	Pedestrian, Residential, Travelling.	Medium	Large	Large	Moderate/Substantial	Moderate/Substantial	2, 4, 11, 16, 17	2, 9, 11, 12, 16, 17	Moderate	Moderate	Slight
FVP2	Residential tower, Choi Po Court, Choi Ying House.	District	Residential	High	Large	Large	Substantial	Substantial	2, 4, 7, 11, 16, 17	2, 7, 9, 11, 12, 17	Moderate	Moderate	Moderate
FVP3	Pedestrian footbridge, San Wan Road	Local	Pedestrian, travelling	Low	Large	Intermediate	Slight/Moderate	Slight/Moderate	2, 4, 11, 16, 17	2, 9, 11, 12, 17	Slight	Slight	Insignificant
FVP6b	Highpoint above Fu Tei Au Tsuen, facing east.	District	Recreational.	Medium	Large	Intermediate	Moderate/substantial	Moderate	2, 4, 11, 16, 17	2, 6, 9, 11, 17	Moderate	Sight	Insignificant
FVP8	Access road adjacent Ng Tung River, west of Wa Shan	Local	Recreational	Medium	Intermediate	Intermediate	Moderate	Moderate	2, 4, 11, 16, 17	2, 9, 11, 17	Moderate	Slight	Insignificant
FVP9	Access track, Sheung Shui Wa Shan	Local	Residential, Occupational	Medium	Intermediate	Intermediate	Moderate	Moderate	2, 4, 11, 16, 17	2, 9, 11, 12, 17	Moderate	Slight	Insignificant
FVP10	Access road, south of Sheung Shui Wa Shan.	Local	Travelling	Low	Large	Large	Slight/Moderate	Slight/Moderate	2, 4, 11, 16, 17	2, 9, 11, 12, 17	Slight	Slight	Insignificant
FVP13 (F20)	High Rise Residential buildings around Tin Ping Estate	District	Residential - High Rise	High	Large	Large	Substantial	Substantial	2, 4, 11, 16, 17	2, 6, 9, 11, 12, 17	Moderate	Moderate	Slight
FVP14	Footbridge north of Wu Nga Lok Yeung	Local	Pedestrian, Recreational	Medium	Large	Large	Moderate/Substantial	Moderate/Substantial	2, 4, 11, 16, 17	2, 6, 9, 11, 12, 14, 17	Moderate	Moderate	Insignificant
FVP15 (F4)	Siu Hang San Tsuen	Local	Residential - Low Rise	High	Intermediate	Small	Moderate	Moderate	2, 4, 11, 16, 17	2, 9, 11, 12, 17	Moderate	Moderate	Slight
FVP16 (F11)	Belair Monte & Regentville	District	Residential - High Rise	High	Large	Large	Substantial	Substantial	2, 4, 11, 16, 17	2, 6, 9, 11, 12, 17	Moderate	Moderate	Slight

VSR Code (Code for other NDA)	Name	VSR Category (Strategic/ District/ Local)	VSR Type	VSR Sensitivity (High/ Medium/ Low)	Magnitude of Change (Large/ Intermediate/ Small/ Negligible)		Impact Significance BEFORE Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		Recommended Mitigation Measures		Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Insignificant)		
					Construction	Operation	Construction	Operation	Construction	Operation	Construction	Operation Day 1	Operation Year 10
FVP17	Bridge over Ma Wat River, Sha Tau Road.	Local	Pedestrian, Recreational, Travelling	Medium	Large	Intermediate	Moderate/ Substantial	Moderate	2, 4, 11, 16, 17	2, 9, 11, 12, 17	Moderate	Slight	Insignificant
FVP18	Road Junction west of Ning Wai & Wing Ning Tsuen	Local	Residential, Pedestrian	High	Large	Intermediate	Substantial	Moderate	2, 4, 11, 16, 17	2, 9, 11, 12, 17	Moderate	Moderate	Slight
FVP19 (F9)	Agricultural plots, Ma Wat Wai.	Local	Recreational	Medium	Large	Intermediate	Moderate	Moderate	2, 4, 11, 16, 17	2, 9, 11, 12, 17	Moderate	Moderate	Slight
FVP20 (F8)	Access road, Shung Him Tong	Local	Residential - Low Rise	Medium	Large	Intermediate	Moderate/ Substantial	Moderate	2, 4, 11, 16, 17	2, 9, 11, 12, 17	Moderate	Slight	Insignificant
FVP21	Highpoint within On Lok Tsuen	Local	Residential	High	Large	Large	Substantial	Substantial	2, 4, 11, 16, 17	2, 9, 11, 12, 17	Moderate	Moderate	Slight/ moderate
FVP22	Bus stop, Cyber Domaine residential estate	Local	Residential, pedestrian, travelling.	High	Large	Large	Substantial	Substantial	2, 4, 11, 16, 17	2, 9, 11, 12, 17	Moderate/ substantial	Moderate	Slight/ moderate
FVP23	Pedestrian footbridge, Kau Lung Hang San Wai	District	Residential, Pedestrian, travelling.	High	Large	Large	Substantial	Substantial	2, 4, 11, 16, 17	2, 9, 11, 12, 17	Moderate	Slight	Insignificant
FVP24	Wo Hing Road, Wo Hop Shek Village	Local	Residential, Occupational, pedestrian, travelling.	High	Intermediate	Intermediate	Moderate/ Substantial	Moderate/ Substantial	2, 4, 11, 16, 17	2, 9, 11, 12, 17	Moderate	Moderate	Slight
FVP25	Residential Block, Wah Sum Estate	District	Residential	High	Large	Intermediate	Substantial	Moderate/ Substantial	2, 4, 11, 16, 17	2, 9, 11, 12, 17	Moderate	Moderate	Slight

12D.15 Conclusion

12D.15.1 Landscape Character Areas

The Lowland Agricultural Landscape (FLCA5) affected by the Schedule 2 DPs is predicted to experience slight adverse impacts, prior to mitigation, in the construction and operational stage. Careful planning of the revised RODP means about 58 ha of land are designated to remain as agricultural land in KTN and FLN NDAs but in these areas referenced agricultural land will be lost. There is no direct compensation measure for the agricultural land lost but some mitigation can be achieved preservation and protection of any trees and where unavoidably affected, transplantation and compensatory planting will assist in reducing the level of impact very slightly. The LVNP is a key component of the Project with preservation and even enhancement of agricultural land which is intended to help alleviate impacts on agricultural land losses across the whole NDA. In the surrounding areas of the Project, 160 ha of land has been found potentially suitable for agricultural rehabilitation/re-site by PlanD with assistance from AFCD. The major cluster (34 ha) is found at Kwu Tung South. By year 10 of operation it is considered the residual impact would remain at a slight adverse level.

Moderate adverse impacts are predicted prior to mitigation works in relation to FLCA1 Natural Hillside Landscape, FLCA2 Rural and Urban Peripheral Village Landscape and FLCA7 Major Water Course Corridor Landscape as a result of the road construction projects. In terms of LCA1, this relates to the high sensitivity of the LCA. The overall area affected in this case is limited and it is considered compensatory woodland planting would quickly reduce this impact to an insignificant level. In terms of FLCA2 and FLCA7, the impacts are mainly generated due to the overall scale of the construction footprint and associated medium sensitivity. In both cases these character areas have undergone development in the past and have capacity to accept a certain level of development. Through mitigation works, in particularly compensatory woodland planting, watercourse mitigation and minimising the need to alter topography, it is considered these impacts can be reduced to insignificant by year 10 of operation.

Slight adverse impacts are predicted in relation to FLCA 3 Urban Development Landscape, FLCA 4 Industrial Landscape and FLCA 6 Major Transportation Corridor Landscape at the construction stage prior to mitigation. The proposed works are considered to have a good compatibility with these LCAs, therefore would assimilate very quickly during operation. In all cases any adverse impacts can be mitigated to slight or insignificant levels by operation day 1. All impacts would be insignificant by operation year 10 through implementation of tree protection measures, tree transplantation and compensation planting.

12D.15.2 Landscape Resources

In summary, prior to mitigation, substantial adverse impacts have been predicted in the construction stage for FLR 1.4 Ma Wat River. This is as a result of the major excavations required for the channel realignment (approximately 600m in length) to accommodate the route of the Fanling Bypass. As the LR would be replaced albeit in a different alignment, the impact would reduce to moderate adverse in operation without any mitigation. It is considered through the application of mitigation measures in the construction stage including minimising the requirement for topographical changes, enhancement planting along embankment, protecting and preserving existing trees, transplanting trees where feasible together with replacement of the channel to match the existing that this impact can be reduced to slight by operation day 1. Following the establishment of transplanted and compensatory planting by year 10 of operation, these impacts would have reduced to insignificant.

The Natural Stream at Siu Hang San Tsuen (FLR-2.4) will suffer a small change due to the Project (where it flows under the Fanling Bypass Eastern Section) due to the high sensitivity, a moderate adverse impact is predicted prior to mitigation in construction and operation. The affected stream at Siu Hang San Tsuen, has largely been protected by changes to the proposed Schedule 3 boundary during the planning of the revised RODP with much of this stream avoided. However the stretch of this stream within the DP10 boundary would be located underneath the road viaduct. To the south of the viaduct the stream flows through the area D1-3, zoned as Open Space, prior to joining Ng Tung River. In this Open Space Zone a 10m buffer is proposed in which natural vegetation will be retained and enhanced. Human activities will be limited in order to avoid direct impacts to the stream bed and to minimise potential indirect impacts to the stream and riparian corridor. At detailed design, in order to avoid impacts to the stream, the design of the viaduct should follow guidelines such as ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/rivers from adverse impacts arising from construction works as well as Building Department (BD) Practice Note for Authorized Persons and Registered Structural Engineers 295: Protection of natural streams/rivers from adverse impacts arising from construction works. This will ensure that no viaduct footings or other structures are placed in the stream; in this case the impact is considered to reduce to slight at construction, becoming insignificant by day 1 and year 10 of operation.

Planning of the revised RODP has taken care to place much of the Mitigation Wetland in FLN NDA (FLR-4.2) that falls within the revised RODP on land for 'Open Space'. The main impacts on this resource are as a result of the Schedule 3 works however moderate adverse impacts in construction and operation, prior to mitigation, are predicted as a result of the construction of the Fanling Bypass Western Section. Whilst the overall area affected is relatively small (1.59ha), this is a highly sensitive and uncommon resource. To address this impact mitigation is provided

in the form of the LVNP which will be managed and the land there, including marsh and wetland areas, enhanced, with a slightly increase in wetland areas. Taking into account the LVNP enhancement and smaller level of impact as a result of the Schedule 2 work, the residual impact significance at construction and operation day 1 is considered to reduce to slight, and by year 10 when wetland and marshes in the LVNP mature, the residual impact will insignificant.

Although a relatively small area of Cham Shan and Wa Shan Hillside Woodland (FLR-6.2) and Hillside Woodland at Lung Shan and Wa Mei Shan (FLR-6.4) is affected by the construction of the Fanling Bypass, this LR has a high sensitivity and tree felling together with disturbance of natural topography is considered to generate moderate adverse impacts in construction and operation prior to mitigation. In this case, minimising the topographical change within the LR will assist in reducing the overall impact combined with tree preservation, tree transplantation and woodland compensation planting. Moderate adverse impacts would still remain in the construction stages post mitigation, however given the small areas affected planting measures would quickly address the impact reducing it to insignificant by year 10 of operation.

A number of agricultural landscape resources are predicted to experience moderate adverse impacts prior to mitigation in the construction and operational stage. These are FLR9.5 Agricultural Land at Sheung Shui Wa Shan, 9.6 Agricultural Land in Wu Nga Lok Yueng, Siu Hang San Tsuen, Siu Hang Tsuen and Lung Yeuk Tau and 9.7 Agricultural Land in South of Sha Tau Kok Road. Whilst there is no direct compensation for the agricultural land lost, direct mitigation includes the possible preservation and protection of any trees in such LRs and where unavoidably affected, transplantation and compensatory planting will assist in reducing the level of impact very slightly. The LVNP is a key component of the Project with preservation and even enhancement of agricultural land which is intended to help alleviate impacts on agricultural land losses across the whole NDA. In addition, this broad agricultural land category (LR9) encompasses both active and abandoned agricultural land including orchard areas. According to a further review and site inspection in December 2012/January 2013 by PlanD with assistance from AFCD, the amount of active agricultural land affected by the Project in FLN NDA is approximately 24 ha. According to the AFCD Annual Report 2011-2012, currently, there are 4,071 ha of abandoned agricultural land in Hong Kong and 734 ha of active agricultural farmland and as such, the affected agricultural land represents a small percentage of active agriculture land in Hong Kong. In the surrounding areas of the Project, 160 ha of land have been found potentially suitable for agricultural rehabilitation/re-site in the above mentioned site inspection. The major cluster (34 ha) is found at Kwu Tung South. Given all these considerations, the significance of impact on agricultural land in these areas will remain the same at construction and operation day 1, but by year 10 will have dropped to slight.

Moderate adverse impacts in construction and operation prior to mitigation are predicted in relation to FLR 7.3 Hung Kiu San Tsuen Lowland Woodland, FLR 7.7 Lowland Woodland near Tai Tau Leng. These impacts are relate to the loss of lowland woodland resources along the alignments of the proposed Fanling Bypass and Po Shek Wu Interchange. The level of impact is considered to reduce to slight by day 1 and insignificant by year 10 as landscape planting works would provide some compensation and through woodland compensation.

Moderate adverse impacts during construction prior to mitigation are predicted in relation to FLR12.12 Rural Development Area in Long Valley, Yin Kong and Hak Ka Wai and FLR 14.3 Fanling Highway. Given the previously developed nature of 12.12 and existing highway function of 14.3, the proposed works are considered to have fair/good compatibility. The initial impacts would be generated due to the large scale of the construction works. In operation it is considered that the impacts would drop to insignificant levels due to the good compatibility of the DPs with the receiving landscape. In terms of mitigation works, minimisation of topographical change, tree transplanting and compensatory planting is predicted to reduce the moderate adverse impact at the construction stage to slight in relation to the both LRs and insignificant by operation day 1.

Slight adverse impacts prior to mitigation are predicted in relation to FLR 1.1 Ng Tung River (Fanling District), 8.3 Shrubland/Grassland Mosaic at Cham Shan and Wa Shan, 9.2 Fu Tei Au Agricultural Land, 11.2 Sheung Shui Urban Area, 11.3 Fanling Urban Area, 12.5 Wa Shan Rural Development Area, 12.6 Lung Yeuk Tau Rural Development Area, 12.7 Rural Development Area at Wo Hop Shek and Lung Shan, 12.8 Rural Development at Ma Shi Po, 12.13 Rural Development Area North of Hong Kong Golf Club, 13.1 Sheung Shui Industrial/Open Storage Area, 13.2 Fanling Industrial Area and 14.2 Sha Tau Kok Road (Lung Yeuk Tau). These impacts principally relate to loss of associated tree cover, large scale construction footprint and in the case of FLR 1.1 and 14.2 excavation works associated with the construction of the Fanling Bypass. It is considered that these impacts can be reduced to slight or insignificant levels at the construction stage through tree protection, transplantation, compensatory planting mitigation measures combined with minimising topographical changes. By year 10 all impacts would be reduce to insignificant levels.

It is considered that all the remaining adverse impacts on LRs could be mitigated to insignificant levels at the construction and operational stage through mitigation works, as these remaining resources fall either within industrial or open storage areas where the works would have a good compatibility with the receiving landscape.

12D.15.1 Visual Impact

In comparison to the level of visual impact experienced by VSRs in KTN associated with the DP Package A, the visual impacts in KTN are

generally less severe. This is as a result of several factors. In terms of high sensitivity residential VSRs, in KTN these are generally at lower levels (2-3 storey village type housing) with less extensive views of the proposed development or in high rise residential towers with a more strategic overview of the development. In the latter case, these broad panoramic views encompass a huge area whereby the proposed development works would only form a small component. The same is true in relation to high sensitivity recreational views from local prominences such as Ki Lun Shan (KVP2) in that the development forms a very small part of a very large landscape view. The proposed road works are also mainly constructed at-grade which results in them being less conspicuous in the landscape and provides for easy integration of visual mitigation measures such as screen planting, vertical green or road greening.

In FLN, the proposed road works are located in or adjacent to areas of dense population within high rise residential towers whereby the visibility of the works is less practical to mitigate. The works for DP 8, 9, 10 also involve construction of large scale viaducts, noise barriers, noise enclosures, bridges and river channel realignments. Subsequently a higher level of residual impacts is generated.

In summary, the visual impact assessment determined that VSRs in the vicinity of FVP2 Residential tower, Choi Po Court, Choi Ying House, FVP13 High rise residential buildings around Tin Ping Estate, FVP16 Belair Monte & Regentville, FVP18 Road Junction west of Ning Wai & Wing Ning Tsuen, FVP21 Highpoint within On Lok Tsuen, FVP22 Bus stop, Cyber Domaine residential estate, FVP23 Pedestrian footbridge, Kau Lung Hang San Wai and FVP25 Residential Block, Wah Sum Estate have substantial visual impact prior mitigation. In all cases these are residential VSRs with elevated panoramic views over the works areas of for the road schemes (DP8, 9 and 10). Given these elevated vantage points will experience unobstructed view of the construction works, it is not possible to fully mitigate the visibility of the construction works therefore these impacts drop to and remain at a moderate adverse level during the construction after implementing mitigation measures. It is considered through road greening and screen planting that the impact can be further reduced to slight levels by year 10 of operation where these planting works will have fully established and helped to assimilate the works into the landscape. In the case of FVP21 and FVP22 slight/moderate impacts are predicted at year 10 of operation due to the visibility of the Fanling Bypass including new noise barriers remaining highly visible even with mitigation.

Moderate/ substantial impacts have been predicted to VSRs in the vicinity of FVP1 Po Shek Wu Road adjacent Tai Tau Lan, FVP6b Highpoint above Fu Tei Au Tsuen, facing east, FVP14 Footbridge north of Wu Nga Lok Yeung, FVP17 Bridge over Ma Wat River, Sha Tau Road, FVP20 Access road, Shung Him Tong and FVP24 Wo Hing Road, Wo Hop Shek Village. Generally these VSRs relate to non residential views where the

development will be a large component of the future view. Due to scale of the works and proximity of these views, a moderate adverse residual impact during the construction works after mitigation is predicted. It is considered in all cases this can be reduced to slight or insignificant levels by year 10 of operation.

Moderate impacts have been predicted to VSRs in the vicinity of FVP8 Access road adjacent Ng Tung River, west of Wa Shan and FVP 9 Access track, Sheung Shui Wa Shan, FVP15 Siu Hang San Tsuen and FVP19 Agricultural plots, Ma Wat Wai at the construction stage before mitigation. The development will be a large component of the future view. Due to scale of the works and proximity of these views, a moderate adverse residual impact during the construction works after mitigation is predicted. It is considered in all cases this can be reduced to insignificant levels by year 10 of operation through road greening and screen planting measures.

Slight/ moderate impacts are predicted in relation to VSRs in the vicinity of FVP3 Pedestrian footbridge, San Wan Road and FVP10 Access road, south of Sheung Shui Wa Shan. In both cases these are pedestrian level views where the development will be major component of the view. It is considered in all cases this can be reduced to insignificant levels by year 10 of operation through road greening and screen planting measures.

It is considered that all remaining VSRs could be mitigated to slight and insignificant at the construction stage through mitigation works.

12D.15.2 Cumulative impacts

Cumulative impacts are assessed for concurrent developments together with the wider NDA projects as follows.

12D.15.3 FLN & KTN NDA

The assessment of impacts in relation to LRs and LCAs in this section has considered the construction of the schedule 2 DPs in isolation so that it is possible to identify and quantify their specific influences and contributions to potential landscape and visual impacts within the wider NDA projects. In general the construction footprint of the schedule 2 DPs are significantly smaller than the schedule 3 components and the associated impacts on LRs and LCAs are also far smaller. When considered together the impact of the schedule 2 projects would not alter the outcome of the schedule 3 assessment as this has taken into the account the same LRs/LCAs within broadly the same study area. It is only on the periphery of the urban area where the schedule 2 DPs potentially exert additional impact on LRs and LCAs beyond the construction footprint of the schedule 3 works, in this case the Fanling Bypass and Po Shek Wu Interchange works. In this case the additional impact, providing mitigation measures are implemented, would prove to be insignificant.

In terms of visual impact, the proposed DPs principally exert negative impacts from VSRs experiencing a panoramic view over the development; in the future this will include the extensive and large scale NDA development. It is considered that, as the road will be seen in the context of the new urban development, it would become more visually acceptable and potential reduce the level of residual impact.

12D.15.4 Agreement No. CE42/2006(TP) Planning Study on Liantang/Heung Yuen Wai Cross-boundary Control Point and its Associated Connecting Roads in Hong Kong – Feasibility Study.

A new Boundary Control Point (BCP) is proposed to be constructed at Liantang/Heung Yuen Wai together with its connecting roads and other associated works. These works involve a tunnel portal which will appear on the Lung Shan hillside east of the Fanling Highway. The Fanling Bypass Eastern works will integrate with these works as these join the Bypass in the same vicinity. It is considered that the DP10 works are considerably smaller than the BCP works and will be far less visually dominant. There will be a significant intrusion of new road into the open valley landscape which will have a far greater operational footprint. In this case, this case there may be a marginal increase in the cumulative impact from high sensitivity VSRs with a view of this area.

12D.15.5 Agreement No. CE53/2008(CE) Planning and Engineering Study on Development of Lok Ma Chau Loop - Investigation

The LMC Loop eastern connection road lies within the study area of KTN NDA; this will link to DP 4 (KTN NDA Road D1 to D5) distributor road south of Ma Tso Lung. This project is remote from the DPs within this assessment; there would be no cumulative impacts.

12D.15.6 Widening of Tolo Highway/ Fanling Highway between Island House Interchange and Fanling (Stage 2)

This project is the vicinity of the Po Shek Wu Interchange improvement works (DP8). The majority of the DP8 works are offline from the main highway, it is considered that only if the projects are run concurrently that VSRs experiencing views of both of the project would experience potentially worse visual impacts during the construction.

12D.15.7 Construction of cycle tracks and the associated supporting facilities from Sha Po Tsuen to Shek Sheung River.

This project is remote from the DPs within this assessment; there would be no cumulative impacts.

12D.15.8 Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery.

The Sandy Ridge site is located to the north of the two NDA sites, to the east of the NG Tung River and adjacent to Lo Wu MTR station at the border with Shenzhen. This project is remote from these DPs and there would be no cumulative impact.

12D.15.9 Overall conclusion

Landscape and visual mitigation works in relation to these DPs during the construction stage rely heavily on the minimisation of the footprint of the works area, avoidance of significant topographical changes together with the retention, protection and compensatory planting of trees / vegetation. These measures if deployed have the capacity to reduce, in most cases, the level of residual impact experienced by the VSRs, LRs and LCAs at the construction stage.

It is not possible to fully mitigate all impacts in relation to loss of mature woodland or tree planting, including the visual amenity/ screening they provide in the construction period and early operational stages, mainly as long periods of time are required to sufficiently compensate for the associated impacts. Providing compensatory measures are applied, in combination with transplantation of existing trees (which can help to accelerate the compensation period), the impacts to VSRs and LRs affected by these DPs can be reduced to slight or insignificant levels. Road greening measures such as use of climbing plants and verge planting help to break up the uniformity of new road formation and associated structures (such as footbridges), when used in combination with wider screening measures they will help to reduce the visual impacts in the early operational stages until tree screens have established and matured.

On review of the likely residual impacts and possibility to reduce all to slight or insignificant level by operational year 10, it is considered that DPs 8, 9, 10 and 12 would be acceptable in terms of landscape and visual impacts.

12D.15.10 Schedule 2 Designated Projects Overall conclusion

The following section provides the overall conclusion of the LVIA for Schedule 2 DPs at and associated with KTN and FLN NDAs.

In summary, the principal landscape character areas and resources that will be affected by the construction and operational phases of the scheme are rural and urban peripheral villages, hillside landscapes (including woodland) and agricultural land. Generally they experience substantial to moderate substantial adverse impacts as a result of road construction or

the site of the FLN and KTN Flushing Water Service Reservoirs. In these cases, the level of residual impact significance remain at a moderate level until operational year 10 as direct compensation for the related LCAs/LRs cannot be achieved.

In addition, agricultural landscape resources cannot be direct compensated of which will be inevitably lost in the development. Agricultural land is easy to re-create given the right environment and not rare in the New Territories. According to the AFCD Annual Report 2011-2012, currently, there are 4,071 ha of abandoned agricultural land in Hong Kong and 734 ha of active agricultural farmland, the agricultural land affected by the Schedule 2 DPs only represents a small percentage of active agriculture land in Hong Kong. In view of medium sensitivity of this LR, the impact significant is considered moderate or lower. The residual impact to this LR remains unchanged as there is no direct mitigation measures to compensate the lost. Other measures, including retaining about 48 ha of land zoned agriculture in KTN and FLN NDAs, setting up of LVNP and preserving and transplanting trees in the concerned LR would alleviate the impacts slightly.

Most of the landscape impacts can be reduced to slight and insignificant after the implementation and full establishment of mitigation measures. After all, the residual impacts are considered to be acceptable. Given the proposed developments are located within in an existing rural area, it is inevitable that landscape and visual impacts caused by such major development cannot be fully reduced and remain at a certain level at some locations even after implementation of all possible mitigation measures, including minimising topographical change, detailed design of the engineered structures to ensure compatibility of the proposed development with the existing surroundings, tree protection, preservation and transplantation as well as compensatory planting, woodland compensatory planting, screen planting to buffer structures from views, decorative hoarding to screen undesirable views of work sites, light control within construction sites and at operation to reduce light glare that could potentially cause visual disturbance to VSRs at night time, provision for green roofs and vertical greening to soften hard surfaces on built structures in sight.

It is therefore anticipated that the overall residual landscape and visual impacts from the development of the schedule 2 DPs forming the key infrastructure component of the NDAs are considered acceptable with mitigation measures.