

TABLE OF CONTENTS

2.	PROJECT DESCRIPTION	2-1
2.1	Project Site Location and Site History	2-1
2.2	Need for Project.....	2-1
2.3	Appreciation of Existing Environment.....	2-1
2.4	Description of the Project (Revised RODP)	2-6
2.5	Benefits of the Project	2-15
2.6	Formulation of Revised RODP	2-18
2.7	Major Amendments from RODP to Revised RODP	2-21
2.8	Consideration of Alternatives and Development of the Preferred Option	2-21
2.9	Key Environmental Outcomes.....	2-29
2.10	Development Programme for the Project	2-31
2.11	Concurrent Projects.....	2-34

List of Tables

Table 2.1 Land Use Budget of the Revised RODP
 Table 2.2 Summary of Key Concerns Related to Environment
 Table 2.3 Comparison of Key Development Parameters between RODP and Revised RODP
 Table 2.4 Comparison of Benefits and Dis-benefits for FWSR and RWSR Locations
 Table 2.5 Comparison of Benefits and Dis-benefits for Site Formation Works Options
 Table 2.6 Comparison of Benefits and Dis-benefits for District Cooling System
 Table 2.7 Summary of Key Environmental Problems Avoided and Sensitive Areas Protected
 Table 2.8 Preliminary Construction and Population Intake Schedule
 Table 2.9 Summary of Potential Cumulative Impacts

List of Figures

<u>Figure 2.1</u>	Revised Recommended Outline Development Plan (RODP)
<u>Figure 2.2</u>	Location Plan of Designated Project 1 (DP1) – Primary Distributor Road and District Distributor Road
<u>Figure 2.3.1-2.3.3</u>	General Layout of New Primary Distributor Road (Road P1)
<u>Figure 2.4.1-2.4.5</u>	General Layout of New District Distributor Road (Road D1)
<u>Figure 2.5.1-2.5.2</u>	General Layout of New District Distributor Road (Road D2)
<u>Figure 2.6.1</u>	General Layout of New District Distributor Road (Road D3)
<u>Figure 2.7.1</u>	General Layout of New District Distributor Road (Road D4)
<u>Figure 2.8.1-2.8.2</u>	General Layout of New District Distributor Road (Road D5)
<u>Figure 2.9.1-2.9.3</u>	General Layout of New District Distributor Road (Road D6)
<u>Figure 2.10</u>	Location Plan of Designated Project 2 (DP2) – STL MC Effluent Polishing Plant and Food Waste Pre-treatment Facilities
<u>Figure 2.11</u>	General Layout of STL MC Effluent Polishing Plant and Food Waste Pre-treatment Facilities
<u>Figure 2.12</u>	Location Plan of Designated Project 3 (DP3) - STL MC Water Reclamation Plant
<u>Figure 2.13</u>	General Layout of STL MC Water Reclamation Plant
<u>Figure 2.14</u>	Location Plan of Designated Project 6 (DP6) – Revitalisation Works for San Tin Eastern Main Drainage Channel
<u>Figure 2.15</u>	Locations of Concurrent Projects

List of Appendices

- Appendix 2.1 Preliminary Construction and Population Intake Schedule
- Appendix 2.2 Tentative Construction Programme
- Appendix 2.3 General Layout Plan of Alternative Sites of Water Reservoirs
- Appendix 2.4 Consideration of Alternative Road Alignment (Road P1)
- Appendix 2.5 General Layout Plan of Alternative Sites of STLMC Effluent Polishing Plant and Food Waste Pre-treatment Facilities
- Appendix 2.6 General Layout of Alternative Alignment for Protection of Mai Po Lung Village
- Appendix 2.7 General Layout of Alternative Sites of STLMC Water Reclamation Plant
- Appendix 2.8 General Layout of Alternative Sites of Refuse Transfer Station

2. PROJECT DESCRIPTION

2.1 Project Site Location and Site History

2.1.1.1 The Project area is located to the west of Kwu Tung North (KTN) and Fanling North (FLN) New Development Areas (NDAs) and Fanling and Sheung Shui New Towns, and to the northeast of Yuen Long and Tin Shui Wai New Towns. The Project area is bisected by San Tin Highway into northern and southern parts, and bounded by the Shenzhen River and the proposed Sam Po Shue Wetland Conservation Park (SPS WCP) to the north; the Loop to the northeast; some village settlements and Ki Lun Shan to the east; San Tin Barracks and Ngau Tam Shan to the south; and Tam Mei Barracks and some residential developments to the southwest. The two “Village Type Development” (“V”) sites covering the existing Shek Wu Wai village and the village clusters (San Tin Seven Villages) bounded by San Tin Highway, San Tin Tsuen Road and Tung Wing On Road are excluded from the Project boundary.

2.1.1.2 As compared with the PODP released in March 2021, the Project boundary has been extended from about 320 ha to about 610 ha. The expanded area mainly covers (i) the formed land at LMC BCP which will be released for development upon commissioning of the new Huanggang Port with colocation arrangement on the Shenzhen (SZ) side, (ii) the fish ponds and rural land adjacent to the existing LMC BCP, and (iii) a “Green Belt” (GB) south of Ki Lun Shan at Pang Loon Tei, which is also a response to the suggestion raised by LegCo members during funding application of the subject Study in 2021. The Project boundary is shown in **Figure 1.1**.

2.2 Need for Project

2.2.1.1 The 2013 Policy Address first stated the need to take forward further development of the New Territories North (NTN) with a view to developing a modern new town. Under the Preliminary Study, an area in San Tin / Lok Ma Chau (STLMC) was identified as having potential for further development. Subsequent to the Broad Land Use Concept Plan (BLCP) of STLMC promulgated in 2016 and the eight land supply options recommended by the Task Force on Land Supply in 2019, “Study on Phase One Development of New Territories North - San Tin / Lok Ma Chau Development Node - Feasibility Study” (STLMC FS) and subsequent Investigation Study were commissioned in 2019 and 2021 respectively. With the National 14th Five-Year Plan supporting Hong Kong (HK) to develop into an international I&T centre, it is aspired to develop the Northern Metropolis into a “new international I&T city”.

2.2.1.2 Located at the heart of Northern Metropolis and in close proximity to SZ’s I&T zone in Huanggang and Futian, San Tin Technopole is strategically positioned to be a hub for clustered I&T development that creates synergy with SZ’s I&T Zone. It will contribute to the development of the South-North dual engine (finance – I&T), and become a new community for quality, healthy and green living.

2.3 Appreciation of Existing Environment

2.3.1.1 The Project area has a mixed urban-rural character. Land in the northern portion is predominantly occupied by wetland as well as village developments with some brownfield sites mainly open storage and warehouse uses, whereas land in the southern portion is mainly occupied by domestic structures and village developments with some scattered brownfield operations (mainly open storage, warehouse and workshop uses). These are described further below.

Northern Project Area

2.3.1.2 The northern extent of the Project area refers to the portion located to the north of San Tin Highway and Fanling Highway. San Sham Road, which is an existing road, together with the LMC BCP, bisects the northern part of the Project area.

2.3.1.3 Area to the east of the San Sham Road is physically characterised by existing wetland, knolls and hills. Domestic structures, non-domestic structures and brownfield sites mainly vehicle parks and open storage are particularly prevalent within the eastern part of this area. The HSITP in the

Loop of about 87 ha for I&T development locates at the immediate northeast of the Project area. Development of the HSITP has commenced and first phase development is estimated to be completed in phases from 2024 to 2027.

- 2.3.1.4 Area to the west of the San Sham Road is mainly occupied by existing wetland which stretches across the area and connects to the wetland to the west. Cluster of existing villages is located at the south to the LMC BCP but have been excluded from the Project area. Some other domestic structures, non-domestic structures and brownfield sites mainly open storage and warehouse sited within the Project area. The Mai Po Lung Village (MPLV) Egretty is also sited within the northern Project area. While the Mai Po Village (MPV) Egretty and a Site of Special Scientific Interest (SSSI) are located outside the Project area and partially within the Project area respectively, their combined ecologically importance should be considered.
- 2.3.1.5 There are two existing drainage channels, namely the San Tin Eastern Main Drainage Channel (STEMDC) and San Tin Western Main Drainage Channel (STWMDC) across the north and south of the Project area.
- 2.3.1.6 Currently, the northern Project area is bounded by the SZ River, fishponds as part of Wetland Conservation Area (WCA), the Loop and the hill of Tit Hang. This setup characterised the Northern area with flat and open view of wetland. Pockets of planting, green knolls and watercourses promote a sense of rural landscape character around the area. The existing blue resources are mostly fishponds / channelised watercourse with concrete bank. These natural surroundings host a great variety of mature/semi-mature trees, fauna and flora species in vicinity and within the northern Project area. This includes but not limited to existing night roosts, wetland habitat, mammals, water birds, etc.



Northern Project Area at the north of San Tin Highway and Fanling Highway

Southern Project Area

- 2.3.1.7 The southern and southeastern part of the Project area is bounded by Ki Lun Shan and Ngau Tam Shan. The southern part of the Project area is significantly dissected by existing roads with cultural heritage and knolls and hills scattered around. This has a significant impact on the morphology of this area and in combination with other transport routes effectively subdivides the area into definable parts.
- 2.3.1.8 The southern part of the Project area are currently proposed to be developed for land uses of various scales and characters under this Project. Shek Wu Wai village, which is an existing recognised village outside of the Project area, is located in the middle of the southern Project area. Domestic structures, non-domestic structures and brownfield sites mainly open storage, warehouse and workshops are particularly prevalent within the southern Project area. The domestic structures in these areas are widely dispersed and intermingled with many existing non-domestic temporary structures.



Southern Project Area bounded by Ki Lun Shan and Ngau Tam Shan

2.3.2 Development Constraints and Opportunities for Project Development

2.3.2.1 A number of existing and planned infrastructure, social and environmental features create opportunities and impose constraints to the Project development.

Development Opportunities

➤ Sam Po Shue Wetland Conservation Park

2.3.2.2 The Agriculture, Fisheries and Conservation Department (AFCD) has commenced a Strategic Feasibility Study on the Development of Wetland Conservation Parks System, which proposed the SPS WCP as the first park to be developed. The Government will establish the SPS WCP to enhance the ecological quality and biodiversity of the Northern Metropolis, provide quality outdoor eco-education and recreation facilities for public enjoyment, as well as introduce modernised aquaculture in the park. The SPS WCP, with a proposed area of approximately 338 ha, will serve dual purposes. First, it allows the Government to enhance the overall ecological value, biodiversity and connectivity in the Deep Bay area through proactive conservation and management. Secondly, it will enhance the ecological function and capacity of 288 ha of wetlands with active conservation management and enhance the fisheries resources of 40 ha of fishponds with modernised aquaculture, to compensate for the loss in wetland habitats and fisheries resources arising from the development of San Tin Technopole and to achieve no-net-loss in ecological function and capacity of the wetlands concerned. Within the SPS WCP, there will be 253 ha of ecologically enhanced fishponds compensating for pond habitat loss, 35 ha of enhanced freshwater wetland habitat compensating for other freshwater wetland habitat loss, 40 ha of enhanced fishponds compensating for fisheries loss, and about 10 ha reserved for other supporting facilities. The derivation of the enhancement area is further elaborated under this EIA Study.

➤ Highly Accessible

2.3.2.3 San Tin Highway is the major external road link between the Project and the rest of Hong Kong's strategic road network. The Project will connect to SZ's new Huanggang Port by an elevated primary distributor providing direct connection between the existing San Tin Interchange (STI) and an at-grade district distributor joining the Project's internal roads. It will also allow potential connection to the future Northern Metropolis Highway at the south-east for a direct and convenient connection with the rest of the Northern Metropolis.

➤ Enhanced Cross-Boundary Traffic Connectivity

2.3.2.4 With the future implementation of the "East-in East-out, West-in West-out" cross-boundary strategy, LMC BCP would carry much less cross-boundary goods vehicles' traffic. The strategic repositioning of the cross-boundary crossings would reduce the cross-boundary traffic flows at San Sham Road and its associated connections with STI.

➤ Enhanced Railway Network and Integrated Public Transport Network

2.3.2.5 The proposed San Tin Station under the proposed Northern Link (NOL) Main Line as well as the proposed NOL Spur Line with intermediate station near Chau Tau would serve as the backbone of the public transport network, multi-tier public transport systems would also be needed to serve

both external and internal public transport demands to achieve transit-oriented development strategy. A comprehensive public transport network, including two Transport Interchange Hubs (TIHs) and a Public Transport Interchange (PTI) as an integral part of the smart and green mobility system would reduce private vehicle trips generated by the Project, thus further alleviating the traffic pressure at adjacent strategic roads, and allowing for further potential in the development scale of the Project.

➤ Favourable Geographical Location

2.3.2.6 Being located at the heart of Northern Metropolis and close to the KTN and FLN NDA, Tin Shui Wai, Yuen Long and Sheung Shui New Towns, Huanggang in SZ, and connected by a number of existing and planned strategic transport links to other parts of the Territory, the Hong Kong International Airport and SZ, there is potential for the Project to be developed as a regional centre and strategic employment hub. This geographically favourable location enables development of the area in promoting economic activities.

2.3.2.7 Since the site is bounded by natural hillsides in the south and east, significant elevation differences are foreseen subject to the site formation design. Locally, existing topography will be largely retained for smaller hillsides identified within the site particularly in the southern part. With appropriate slope works and natural terrain hazard mitigation measures implemented, continuity within the development areas can be maintained and the risk of landslide can be kept under control. Ground improvement works associated with reclaimed ponds can also boost future development potential of the northern part of the Project area.

➤ Plentiful Natural and Landscape Features

2.3.2.8 A number of natural and landscape features are identified within and surrounding of the Project area. These features could be utilised to create and enhance a pleasant living environment. This includes the uplands and valley landscape, green knolls, ridgeline/mountain backdrops of Ngau Tam Shan, Ki Lun Shan and Tit Hang, woodlands, and Mai Po Village Egrettery and Mai Po Lung Village Egrettries. The ponds and wetland to the north of the project area foster a distinct local identity and openness. Proper planning and land use zoning could maintain these landscape and ecological capital and establish an integrated green network for the Project. The two major drainage channels namely STEMDC and STWMDC running through the Project area offer good opportunities for blue-green infrastructure, creating distinct local character and provides a pleasant riverfront experience.

➤ Rich Cultural Heritage

2.3.2.9 The Project and its vicinity possess a significant collection of cultural heritage resources, including several Declared Monuments, graded historic buildings, and Mai Po Site of Archaeological Interest (SAI). By implementing suitable planning strategies and designating appropriate land use zoning, these valuable resources can be integrated into the Project for the benefits of existing and future residents.

➤ Land Resources

2.3.2.10 At present a large proportion of land is occupied by ponds, temporary structures and brownfield operation. The vast extent of the temporary structures and brownfield operation in the area are disorder and has created environmental and interface problems. However, with the aspiration to turn such land for more optimal uses, it provides opportunities for supporting the future development of Hong Kong.

Development Constraints

➤ Infrastructure Constraints

2.3.2.11 A number of constraints posed by the existing infrastructure require careful consideration in the planning of the Project:

- i) The elevated section of LMC Spur Line and the two major distributors traversing the Project area, i.e. San Tin Highway and Fanling Highway, will pose environmental constraints to the nearby developments. Other existing major distributors including Castle Peak Road – San Tin, San Tam Road, Kwu Tung Road, Lok Ma Chau Road and Ha Wan Tsuen East Road are also potential air pollution and noise sources that will likely generate environmental impacts to the nearby developments.
- ii) The existing overhead line cables near Chau Tau area at the east and Pang Loon Tei area at the south of the Project require vertical and horizontal separation distance from adjacent proposed land uses in accordance with the Hong Kong Planning Standards and Guidelines would limit the development potential of the adjacent Project areas.
- iii) There is an existing pig farm falling outside of the Project area to the east of Chau Tau Village. Besides, a sewage treatment plant is located within San Tin Barracks in close proximity of the Project area. The future developments should observe relevant requirements on odour impacts, with reference to the findings of the EIA report of this Project.

➤ Environment Constraints

2.3.2.12 The following constraints posed by the existing environment also require careful consideration in the planning of the Project:

- i) The feasibility of surrounding lands is considered comprehensively when planning the land use of the Project. To fully leverage the strategic positioning of the Project, a substantial area of land for I&T purposes shall be provided. However, due to the presence of hills on the eastern and southern sides of the Project, particularly the natural slopes in the southeastern part of the Loop, where the terrain is high and steep, substantial earthwork, soil filling, and infrastructure works would be required to form extensive sites. Considering factors such as associated environmental impact, ground condition, cost, and development programme, the said natural slope is therefore not recommended for development for I&T purposes. Hence, the development lands shall expand towards the inland area closer to the fishponds, while minimising any impact on bird habitats and bird flight corridors. By utilising a portion of the fishponds in a reasonable manner, the planning layout of the Project can be enhanced.
- ii) The existing conservation-related zonings, including CA, OU(CDWEA), OU(CDWRA), GB and SSSI have been carefully reviewed in the formulation of the Revised RODP to uphold the principle of co-existence of development and conservation within the context of sustainable development.

➤ Consideration of the Traditional Villages and Permitted Burial Grounds during planning

2.3.2.13 Existing recognised villages are retained and reserved for village development. Potential interface issues between the villages and the proposed developments will need to be addressed. Permitted burial grounds (PBG) located mainly at the hillslopes of Ki Lun Shan and Ngau Tam Shan, and some isolated knolls in the Project area would generally be retained.

➤ Proliferation of Brownfield Operations Grounds

2.3.2.14 At present, considerable parts of the Project area are being utilised as brownfield operations including logistics, vehicle repair, vehicle parking, open storage and warehouse etc. While recognising that there may be opportunities to accommodate some brownfield operations through developing multi-storey buildings (MSBs) at the reserved sites in the Area or other NDAs, this is likely to be an incremental process. The interface of new developments with the existing brownfield operations during the intervening period needs to be addressed.

➤ Government, Institution or Community Developments

2.3.2.15 A cluster of cultural facilities, service reservoirs, STLHC effluent polishing plant (EPP), electricity substations (ESSs), District Cooling System (DCS), STLHC water reclamation plant (WRP), refuse transfer station (RTS) as well as potential educational, healthcare and youth facilities are expected to be developed in the Project area. Facilities with potential environmental impact such

as EPP and RTS should be sited away from sensitive uses such as residential and educational facilities.

- Preservation of Ecological, Natural and Landscape Features

2.3.2.16 Due considerations should be given to avoid/minimise adverse impacts of the future developments on the existing ecological, natural and landscape features as mentioned in **Section 2.3.2.8** above.

- Flooding Risk

2.3.2.17 Areas adjoining Shek Wu Wai, Chau Tau, Wing Ping Tsuen and Yan Sau Wai are in the flood plain where flooding is evident. Site formation and the drainage system should be designed to minimise flooding risk to the planned developments and the nearby existing settlements.

2.4 Description of the Project (Revised RODP)

2.4.1 Planning Vision and Positioning

2.4.1.1 The following planning vision and positioning were formulated for planning and designing the Project.

2.4.1.2 With the National 14th Five-Year Plan supporting Hong Kong to develop into an I&T centre, we aspire to develop the Northern Metropolis into a “new international I&T city”. Located at the heart of Northern Metropolis and in close proximity to SZ’s I&T zone in Huanggang and Futian, San Tin Technopole, which comprises the Project area and the Loop, is strategically positioned to be a hub for clustered I&T development that creates synergy with SZ’s I&T zone. It will contribute to the development of the South-North dual engine (finance - I&T), and become a new community for quality, healthy and green living.

2.4.2 Size, Scale, Shape and Design of the Project

2.4.2.1 The Project with an area of approximately 610 ha will accommodate 147,000 to 159,000 population with provision of about 165,000 jobs upon full development. The project will mainly include land for residential, I&T, commercial and “Government, Institution and Community” (“G/IC”) uses.

2.4.2.2 To put land resources into optimal use, higher development parameters have been adopted, including a plot ratio (PR) of 6.5 – 6.8 for housing sites and a maximum PR of 6 for I&T land. Mixed use sites comprising residential development, office, hotel, retail, dining and entertainment facilities etc. will adopt a PR of 7 to maximise its development potential.

2.4.2.3 An overview of the key planning elements and land uses of the Revised RODP is provided in **Table 2.1** and the Revised RODP adopted for this EIA study is shown in **Figure 2.1**. Key amendments from RODP to Revised RODP will be elaborated in **Section 2.7**. The preliminary construction schedule under various phases is summarised in **Table 2.1** with reference to **Appendix 2.1**. The key infrastructure of each phase is described in **Section 2.4.3**.

Table 2.1 Land Use Budget of the Revised RODP

Land Use	Area (ha)	%
Residential and Mixed Uses	60.2	11.2%
Other Specified Uses (I&T)	211.7	39.3%
Other Specified Uses (Logistics, Storage and Warehouse)	16.2	3.0%
Public Facilities	90.7	16.8%
Open Space	55.6	10.3%
New Roads	76.7	14.2%
Amenity	27.5	5.1%
Total Development Area	539	100%
Existing Road	33.5	-
Green Belt	37.5	-
Total Project Area	610	-

Remarks: The above Land Use Budget is based on the Revised RODP. Due to rounding, the figures presented may not add up precisely to the totals provided and percentages may not precisely reflect the absolute figures.

Public Housing, Private Housing and Mixed Uses (“RSc”, “R1” & “OU(MU)”)

- 2.4.2.4 The planning intention of public housing (“RSc”) sites is primarily for high density subsidised housing developments and may be with compatible non-domestic uses, including retail, commercial, social and community uses. “RSc” sites are reserved for public rental housing (PRH), subsidised sale flat (SSF), other forms of subsidised housing, or a mix of them to cater for the future demand for subsidised housing.
- 2.4.2.5 The planning intention of private housing (“R1”) sites is primarily for high-density private residential developments and may be with compatible non-domestic uses to provide local needs and services.
- 2.4.2.6 The mixed use (“OU(MU)”) sites are intended primarily for mixed use development comprising with a mix of commercial / office, hotel, retail/dining/entertainment (RDE) and residential uses incorporated with a TIH.

Village Resite

- 2.4.2.7 Under the Revised RODP, an area to the south of San Tin Highway is designated for village resite, which is intended for re-provisioning the affected village house/building lots under the Village Removal Terms due to the Government Projects.

I&T

- 2.4.2.8 The planning intention of the I&T (“OU(I&T)”) sites is to provide space for I&T development to cater for the needs of different industry players and to develop different I&T fields at different stages of the I&T value chain. To promote the concept of “work-live-learn-play” and to nurture I&T development, a range of complementary uses which could provide business support (e.g. office, convention facilities, hotel, etc.), living support (e.g. talent accommodation, retail, dining, etc.) and other uses which attract businesses are also allowed in the zone.

Logistics, Storage and Workshop (“LSW”)

- 2.4.2.9 The planning intention of logistics, storage and workshop (“OU(LSW)”) sites is primarily for logistics, storage and workshop (LSW) uses. The sites could be used for development of MSBs for modern industries, which may also accommodate brownfield operations affected by Government projects. Open-air operations are also allowed to suit the operational needs of various kinds of LSW uses.

Public Facilities (“G/IC”)

- 2.4.2.10 “G/IC” sites are intended primarily for the provision of G/IC facilities serving the needs of the local residents and/or a wider district, region or the territory. These facilities will serve the work of Government, instead of residents. These sites are also intended to provide land for uses directly related to or in support of the work of the Government, organizations providing social services to meet community needs, and other institutional establishments. The G/IC provision has been planned in response to relevant departments’ request and in accordance with the Hong Kong Planning Standards and Guidelines. Facilities such as schools, police station, fire station, Joint government office, G/IC complex, cultural and recreational complex, youth facilities, healthcare facilities and AFCD Wetland Conservation Park Management Office, etc. have been proposed. The overall provision would be adequate to serve the planned population of the Project.

Infrastructural Facilities

- 2.4.2.11 Six District Cooling Systems (DCS), in which four of them are zoned under “OU(DCS)” are provided to supply chilled water to buildings planned for non-residential purpose and non-domestic portion of residential sites within the Project area for air-conditioning purpose. The remaining two DCS are zoned under “OU(I&T)” and are intended to serve I&T uses. One Effluent Polishing Plant (EPP) and Food Waste Pre-treatment Facilities under “OU” is provided to cater for the sewage flows arising from the existing and planned developments in San Tin area. Apart from the existing Mai Po Substation, eleven ESS are zoned under “OU”.
- 2.4.2.12 Three sewage pumping stations (SPS) are zoned under “OU” for collecting sewage flows from the Project area and pumping to the planned EPP for treatment. Two stormwater pumping stations are zoned under “OU” for flood protection purpose. A WRP is zoned under “OU” to receive treated effluent from the planned EPP for further treatment to raise the quality of reclaimed water for non-potable use.
- 2.4.2.13 An “OU” site has been reserved for co-locating the RTS and RRF to cope with the wastes generated by the proposed residential and working population and to encourage sustainable use of resources and help collect different types of recyclables in the local community.
- 2.4.2.14 In terms of railway facilities, sites have been reserved for railway ancillary facilities and zoned as “G/IC” to support railway development of the proposed NOL and site zoned as “OU(Railway)” for the existing LMC Spur Line, and a site designated to reflect the existing Chau Tau Ventilation Building (VB) of the LMC Spur Line and zoned as “OU(VB)”.
- 2.4.2.15 A PTI is planned to improve the connectivity of Pang Loon Tei, while two green fuel stations are planned for the provision of green fuel stations for vehicles.

Open Space

- 2.4.2.16 Open space (“O”) is primarily for the provision of outdoor open-air public space for active and/or passive recreational uses serving the needs of both the local residents, workers, as well as the general public. “O” connects major activity nodes to promote active lifestyle and serves as a green buffer between the village and the high-density developments as well as part of the overall sustainable drainage system, etc.

Amenity

- 2.4.2.17 Amenity strips will be provided at roadside as far as possible to enhance the amenity and to serve as visual buffers between existing villages and new developments. They offer good opportunities for landscaping and tree planting.

Green Belt

- 2.4.2.18 The green belt (“GB”) mainly reflects the existing permitted burial grounds and areas densely occupied by existing graves, natural features and mature vegetation .

2.4.3 Key Infrastructures of the Project

Site Formation

2.4.3.1 The site formation to be carried out in the Project covers the majority of the Project area. The types of site formation works to be adopted at various areas within the Project area will be determined based on the approach mentioned in **Section 2.8.7**.

2.4.3.2 The surplus inert C&D materials generated from the site clearance and formation works and construction of new buildings and infrastructure works would be reused either within the development for backfilling at later stage or in the concurrent projects. The quantity of C&D materials is detailed in **Section 7**.

Roadworks and Utilities

2.4.3.3 The proposed roadworks and utilities include road networks, drainage systems, sewerage networks, water supply networks, District Cooling System (DCS) pipe networks and utility construction to support the development. The road infrastructures are shown in **Figure 2.2** and listed below:

- Primary distributor road – P1
- District distributor road – D1, D2, D3, D4, D5 and D6
- Other local roads

Other than the construction of elevated Road P1 at the realigned San Sham Road, typical construction method for at-grade road construction would be adopted. The works would involve earthworks, utilities laying, construction of Common Utilities Enclosure (CUE), laying of sub-base materials and laying of bituminous or concrete surfacing layers.

Viaduct

2.4.3.4 The Road P1 include viaduct construction works and temporary traffic arrangement to maintain cross boundary traffic throughout the course of construction activities. The viaduct can be erected by cast in-place concrete construction method, prefabricated steel structure construction method and precast concrete construction method, subject to the scale, site condition, design, cost-effectiveness and environmental friendliness of the proposed viaduct.

Fresh Water Service Reservoir (FWSR) and Reclaimed Water Service Reservoir (RWSR)

2.4.3.5 Facilities for fresh water supply and reuse of treated sewage effluent (TSE) involve the service reservoirs and the associated pipeworks. The major construction works will include earthwork, concrete works for service reservoir structures and construction of maintenance roads. Cut and fill slopes shall be formed for the formation of platform for the service reservoirs construction. Installation of soil nail may be carried out for slope stabilisation.

Effluent Polishing Plant (EPP)

2.4.3.6 The proposed EPP will be designed up to tertiary level treatment standard to treat the sewage generated from the development site which enable for reuse of reclaimed water while the rest of sewage effluent is suggested to discharge to the Deep Bay. The major construction works will include earthwork, concrete works for EPP structures and construction of maintenance roads.

STLMC Water Reclamation Plant (WRP)

2.4.3.7 STLMC WRP includes construction of superstructures and water reclamation system together with associated pipeworks connecting the RWSR and proposed land parcels, which support the population and occupation of the Project.

River Revitalisation Works

- 2.4.3.8 The river revitalisation works of STEMDC and STWMDC are proposed to improve the flood resilience and adaptation to climate change of the development area. Landscape and recreation provisions will be provided along revitalised STEMDC and STWMDC. These provisions including planting of suitable trees would enable connectivity and usage for mammals and avifauna.

Flood Attenuation Measures

- 2.4.3.9 Flood attenuation measures such as underground storage tanks, integrated ponds and retention ponds are proposed along the upstream of STEMDC and STWMDC to mitigate the flood risk of downstream due to increase of surface runoff due to climate change. In view of the large spatial condition of retention lake, the latest requirements within the open space could not be fulfilled. As such, integrated approach is proposed as the only way to maximise open pond, which is more sustainable, and to compensate with underground tank to meet end century requirements.

District Cooling System (DCS)

- 2.4.3.10 The proposed DCS sites serve a large-scale centralised district cooling system comprising chiller plant and cooling tower plant which deliver cooling water to non-domestic buildings within a district via underground insulated pipeline in an energy efficient way. The major construction works will include earthwork, concrete works for DCS plants structures and construction of maintenance roads.

Refuse Transfer Station (RTS)

- 2.4.3.11 RTS is proposed for handling residual municipal wastes. The major construction works will include earthwork, concrete works for RTS structures and waste transfer system and construction of maintenance roads, which support the population and occupation of the Project.

Landscaping Works at Open Spaces, Amenity Areas and Slopes

- 2.4.3.12 Landscaping works at open space, amenity areas and slopes will be conducted after site formation works and slope works. As these will mainly involve planting and pedestrian facilities, environmental impact is not anticipated.

Building Works

- 2.4.3.13 Building works of each site will be carried out by Project Proponent or B/Ds or future developers after site formation works and site handover. Phased implementation of site formation works and building works will be carried out to minimise concurrent construction works, thus minimise the generation of construction environmental impact and nuisance to the public throughout the course of construction.

Cavern Development

- 2.4.3.14 The potential cavern development, namely Ngau Tam Mei (NTM) cavern area under the Project Profile and EIA SB, is located to north of the Ngau Tam Mei Water Treatment Works (NTMWTW). The opportunities of cavern development have been reviewed and assessed to accommodate facilities such as RTS and EPP to support the RODP. As discussed in **Section 2.8.4 and 2.8.6**, it is considered infeasible to accommodate RTS and EPP into cavern, the cavern option is therefore not included in the Revised RODP.

2.4.4 Transport Network

Road Transport

- 2.4.4.1 There are four major external connections linking the Project to the surrounding area. It will be served by the existing San Tin Highway and Fanling Highway in the East – West direction, joined

to the new Huanggang Port at the North by a primary distributor road, and linked to future Northern Metropolis Highway at the South-east of the Project.

- 2.4.4.2 The proposed layout of the Project's road network seeks to provide better linkage between developments located at the North and South of the San Tin Highway. The existing Shek Wu Wai Interchange (SWWI) provides slip roads at its western side connecting Shek Wu Wai Road and Mai Po Lung Road to San Tin Highway but does not allow connection to San Tin Highway at its eastern side. To enhance the accessibility of the Project, a pair of new slip roads is proposed at the eastern side of SWWI to facilitate traffic movement. At the same time, improvement to the slip roads from STI towards westbound San Tin Highway is proposed to strengthen future connectivity. With the close proximity of the proposed improvement works and other adjacent slip road accesses, simultaneous merging and diverging along San Tin Highway between SWWI and STI may lead to the convergence of merging and diverging traffic at the nearside lane of San Tin Highway which is considered not desirable in terms of road safety. To reduce safety risks, a lane-gain arrangement is proposed at the end of the merging slip roads such that the traffic lane continues towards the adjoining diverging lane. Such widening of San Tin Highway between SWWI and STI is achieved by utilising the amenity / reserve area and no additional traffic is anticipated to be generated from such lane-gain arrangement. Noise mitigation measures will be incorporated along the San Tin Highway to facilitate the development of the Project if necessary.
- 2.4.4.3 The proposed SWWI shall be utilised as the key access to the development area for traffic coming from the west of San Tin Highway. The existing STI will be maintained and transformed into another key access to the development area for traffic coming from east of San Tin Highway. The overall road network shall make use of these two interchanges as the main connection points to integrate the Project's internal road network with San Tin Highway and Fanling Highway.
- 2.4.4.4 To minimise adverse impact to the sensitive surrounding uses, special treatment of the road segment between the existing villages, wetlands to the north of the Project and the proposed San Tin North I&T Park is being explored. For example, diversion of some traffic to the underground level of the adjoining I&T land use will be considered.
- 2.4.4.5 Vehicular traffic is proposed to be located underground / avoided at sizable I&T developments at San Tin North to reserve for various ingress/egress and allow flexibility for I&T uses as well as Living Avenue at San Tin South. Such proposal has the following benefits:
- Reduction in vehicles travelling along at-grade level brings consequential benefits to air quality;
 - Reduction in noise impacts;
 - Reduction in the area occupied by roads thereby making land available for other uses such as greening; and
 - Freed-up road space could be proposed as pedestrian oriented zone to encourage walking and cycling.
- 2.4.4.6 In addition to the above, the disposition and arrangement of land use has been considered with the environmental impacts that can arise from traffic in mind. A particular strategy has been considered to locate land uses that attract heavy goods vehicles (HGV) to the east and south-east of the Project area near the STI and the future potential external connection at the South-east of the Project respectively. Such intention is to provide a short and direct route for these HGV to / from San Tin Highway / Fanling Highway / future Northern Metropolis Highway to minimise the environmental impacts brought by HGV to the Project's internal road network.
- 2.4.4.7 The major components of the proposed road hierarchy for the Project are as follows:
- Primary Distributor (Dual 2-lane Standard)*
- 2.4.4.8 The existing San Sham Road will be re-aligned to a primary distributor (PD) Road P1 (elevated road) and district distributor Road D6 (at-grade road) are located adjacent to the existing LMC BCP. Road P1 connects STI and the existing San Sham Road at the North of the Project providing

direct access to / from SZ. It is proposed as a viaduct with an aim to bypass the traffic junctions along the at-grade Road D6 underneath.

District Distributor (Single 2-lane / Dual 2-lane Standard)

- 2.4.4.9 A total of six district distributors (DD) as described in **Section 2.4.3.3** are proposed serving as the major linkage between the four external connections and the Project's local road network.

Local Distributor (Single 4-lane / Single 2-lane Standard)

- 2.4.4.10 A total of twenty-six local distributors (LD) serves a major role in linking up the proposed development parcels and existing developments (such as existing villages) with the proposed district distributors / existing road network.

Existing Roads

- 2.4.4.11 Apart from the section of Castle Peak Road fronting Yan Shau Wai, Ha Wan Tsuen East Road, and a section of Lok Ma Chau Road, the existing road system is to be largely demolished / realigned / upgraded. The construction of the proposed new roads and realignment / improvement of existing roads will be implemented progressively in accordance with the proposed development programme.

Public Transport

Rail-based Public Transport

- 2.4.4.12 The proposed NOL Main Line and NOL Spur Line along with the existing Lok Ma Chau Spur Line will provide passenger services for the Project. These railways will serve as the backbone of the Project's public transport facility. Two proposed railway stations are provided within the Project boundary, including proposed San Tin Station and proposed station near Chau Tau.
- 2.4.4.13 While the proposed NOL Main Line and proposed NOL Spur Line are expected to be constructed below ground level, the section of the existing Lok Ma Chau Spur Line within the Project area runs on an underground track from the east and ascends to a viaduct with an elevation of approximately 21mPD at Lok Ma Chau Station.

Road-based Public Transport

- 2.4.4.14 Apart from railway, road-based public transport services will be provided with public transit infrastructures planned at strategic locations. Upon full development, the population and employment within the Project is anticipated to be approximately 147,000 to 159,000 and 165,000 or more jobs respectively, the need for additional bus routes will be generated to meet local demand with current bus routes servicing the Project area expected to be maintained.
- 2.4.4.15 Two TIHs and one PTI would be provided within the Project. With reference to **Figure 2.1**, one of the TIHs is provided adjacent to the proposed station near Chau Tau, together with park and ride facilities, to provide a convenient and pleasant setting for multi-modal transport interchange activities. Another TIH adjacent to the proposed San Tin Station is proposed considering its convenient location to the south-western portion of the Project. The PTI is proposed at Pang Loon Tei for interchanging of road-based public transport services.
- 2.4.4.16 Further to the above-mentioned major public transport facilities to be provided in the Project, Smart Green Feeder System (SGFS) is also proposed as feeder services for population and employment clusters sited away from the railway catchment areas. The proposed SGFS traverses the core of residential, commercial, and I&T sites within the Project area. Although the system that will ultimately be adopted is subject to future decision, SGFS in the form of electric bus transit has been assumed under the EIA.
- 2.4.4.17 An inter-district Green Transit System (GTS) has been introduced under the Agreement No. CE51/2051 (TT) Traffic and Transport Strategy Study – Feasibility Study (TTSS). From on-going

liaison with the TD, the potential route for the GTS has been identified within the Project area to connect the proposed San Tin North I&T sites, existing village establishment, and the proposed railway station near Chau Tau. The carriageway and roadside greenery areas along the potential GTS route have been designed to allow for the potential operation of GTS in the future.

Pedestrian Walkway and Cycle Track Networks

- 2.4.4.18 There will be a comprehensive network of cycle track and pedestrian walkway system connecting various planning areas, developments, public spaces and activity nodes of the Project, with a view to realising the 15-Minute Neighbourhood concept¹, promoting a healthy and active lifestyle.

Pedestrian Infrastructure

- 2.4.4.19 Pedestrian footpaths are provided along both sides of the road network and vehicle free pedestrian passages will also be provided along the arterial open space corridors. Elevated pedestrian crossings will be avoided where possible to enhance universal barrier free access. However, as the Project is dissected by the San Tin Highway, footbridge cum cycle track on both sides of Yan Shau Wai spanning across San Tin Highway and a pedestrian subway cum cycle track beneath SWWI are proposed to strengthen pedestrian connectivity between the north and south of the Project. To facilitate movements across San Tin Highway/Fanling Highway, 3 new crossings for pedestrians and cyclists will be constructed in addition to 4 existing underpasses/footbridges. Given the gradients prevailing within the Project, ease of movement should be available to all. The proposed footpaths of the Project will be joined to existing footpath network at the periphery of the Project boundary.

Cycling Provision

- 2.4.4.20 To encourage the use of active transport modes, a comprehensive cycling network will be provided along all roads. Cycle track network within the Project has been designed to tie in with the existing cycle tracks. As mentioned above, footbridge cum cycle track on both sides of Yan Shau Wai spanning across San Tin Highway and a pedestrian subway cum cycle track beneath SWWI are proposed to link up the cycle network between the north and south of the Project seamlessly.

2.4.5 Designated Projects

- 2.4.5.1 Based on the RODP, the Project would comprise the following designated projects by virtue of items A.1, F.1, F.2, F.4, G.2, H.1, I.1 and P.1, of Schedule 2 of the EIAO.

DP 1 – Construction of New Primary Distributor and District Distributor Road

- 2.4.5.2 The Project will be served by a network of PD, DD and LD roads. The PD will run between the existing STI and San Sham Road at the northern part of the Project area in form of viaduct structure. DD roads will run through the Project in the form of a ring serving as the major linkage between the Project's LD network and the four external connections including San Tin Highway, Fanling Highway, new Huanggang Port, and the potential external connection at the South-east of the Project. LD roads will have several connections to the proposed DD roads.
- 2.4.5.3 On top of the existing slip roads at SWWI, two additional slip roads will be constructed to connect the Project with the eastbound and westbound of San Tin Highway. Furthermore, one slip road will be constructed along the southbound of Road D6 connecting to the southbound of Road P1 to facilitate the traffic connection at the northern part of the Project.
- 2.4.5.4 Moreover, the existing road system is to be largely demolished / realigned / upgraded apart from the section of Castle Peak Road fronting Yan Shau Wai, Ha Wan Tsuen East Road, and a section of Lok Ma Chau Road.

¹ The 15-minute Neighbourhood concept proposes walking as a primary mode of commute, in which a rich mix of uses ranging from shops, restaurants, workplaces, homes to local health care and education establishments are strategically reachable within a short walking or biking distance.

2.4.5.5 The proposed PD, DD, and improvements to existing roads including re-alignment and junction improvement works will fall into the category of Item A.1, Part I, Schedule 2 of EIAO.

2.4.5.6 The general layout of PD road P1 is presented in **Figure 2.3.1-2.3.3**, and DD road D1, D2, D3, D4, D5 and D6 are presented in **Figure 2.4.1-2.4.5**, **2.5.1-2.5.2**, **2.6.1**, **2.7.1**, **2.8.1-2.8.2** and **2.9.1-2.9.3** respectively.

DP2– Construction of STLMC EPP

2.4.5.7 A new sewage treatment works, which will be a tertiary EPP, will be built to support the population of the Project. The treatment capacity of the EPP is proposed to be at 125,000 m³/day.

2.4.5.8 The proposed EPP will fall into the category of Item F.1 & F.2, Part I, Schedule 2 of EIAO.

2.4.5.9 The location and general layout of EPP is presented in **Figure 2.10** and **2.11**.

DP3 – Construction of STLMC WRP

2.4.5.10 A new WRP will be built to support the population of the Project. The capacity of the STLMC WRP is proposed to be around 112,500 m³/day.

2.4.5.11 The proposed STLMC WRP will fall into the category of Item F.4, Part I, Schedule 2 of EIAO.

2.4.5.12 The location and general layout of the STLMC WRP is presented in **Figure 2.12** and **2.13**.

DP4 – Construction of RTS

2.4.5.13 In the eastern part of the Project area along the Fanling Highway, site OU.1.9 has been proposed for the provision of a new RTS with treatment capacity of 3,000 tonnes per day (tpd) together with a new resource recovery facility (RRF) to cope with the new population waste generation of the Project and also for territory treatment purpose.

2.4.5.14 The proposed RTS will fall into the category of Item G.2, Part I, Schedule 2 of EIAO.

2.4.5.15 The location of the RTS is presented in **Figure 1.2**.

DP5 – Construction of 400kV Electricity Substation (ESS)

2.4.5.16 Two 400kV ESS are proposed within the Project area to cope with the power demand generated from the new development. These include sites OU.1.7 and OU.4.2.

2.4.5.17 The proposed 400kV ESS will fall into the category of Item H.1, Part I, Schedule 2 of EIAO.

2.4.5.18 The locations of the 400kV ESS are presented in **Figure 1.2**.

DP6 – Revitalisation of San Tin Eastern Main Drainage Channel

2.4.5.19 The current STEMDC that sits within the Project boundary is mainly concrete channelised waterway. The proposed waterway framework aims to maximise opportunities for open channel treatment and enhance benefits from flood resilience infrastructure. The revitalisation of the drainage channels is proposed via dechannelisation where appropriate and applicable. It is proposed that the embankments of the channel be treated with greening measures appropriate to each individual context. This includes strategy such as naturalisation of channel bank, replacing concrete bank with sloped green edge, gabion wall design, planting with native vegetation etc. Most of the vegetation species along the channel should comprise native species and refer to existing local flora.

2.4.5.20 The STEMDC is located within 300m from an existing Conservation Area, revitalisation works would fall into the category of Item I.1, Part 1, Schedule 2 of the EIAO, subject to the change in

land use proposals in future zonings of the concerned “Conservation Area” as shown in **Figure 1.2**.

- 2.4.5.21 The revitalisation of STEMDC is proposed to improve the flood resilience and adaptation to climate change of the development area. Flood attenuation measures such as underground storage tank, integrated ponds and retention ponds are proposed along the upstream of STEMDC. The existing engineered channel at downstream is proposed to be naturalised embankment which provides green buffer along the revitalised water channel and further enhances ecological and landscape value. Open spaces encompassing STEMDC will be designed with floodable landscape treatments to enhance the resiliency of the adjacent area.
- 2.4.5.22 To cater for the upgrading works of existing Tun Yu Road, the STEMDC is proposed to shift eastwards and re-profile with natural and hybrid embankment treatment. The width of riverbed between the natural and hybrid embankment is approximately 28m. The arrangement is detailed in **Section 14**. The revitalisation works will run along the STEMDC, which is located within 300m of Conservation Area, are identified in **Figure 2.14**.

DP7 – Recreational Development within Deep Bay Buffer Zone 2

- 2.4.5.23 With reference to the demarcation of Deep Bay Buffer Zone, open space provided with tree planting and water features locating at site O.1.1, O.1.2 and O.1.3 within Deep Bay Buffer Zone 2 are proposed as recreational development for the enjoyment of the general public. The Mai Po Lung Village Egretty will be preserved at O.1.3.
- 2.4.5.24 The proposed development within Deep Bay Buffer Zone 2 will fall into the category of Item P.1, Part 1, Schedule 2 of EIAO.
- 2.4.5.25 The general layout of the Deep Bay Buffer Zone 2 is presented in **Figure 1.2**.

2.4.6 Environmental Acceptability of the Schedule 2 Designated Projects

- 2.4.6.1 With reference to the Project scope as stated in **Section 1.2**, the EIA has provided an assessment of the potential environmental impacts associated with the construction and operation of the Project, based on the engineering design information available at this stage. This has included specific assessment including key mitigation measures for the Schedule 2 Designated Projects (DP) subject to environmental permit application under this Project (DP1, DP2, DP3, DP6 and DP7) within the individual chapters.

2.5 Benefits of the Project

- 2.5.1.1 The Project aspires to turn the existing brownfield uses including logistics & freight operation, vehicle-related operation, warehouse/workshop, and open storage, which have created considerable environmental, traffic, visual, and other nuisance, to more optimal uses and better land utilisation for future development of Hong Kong. Meanwhile, the Project will have the opportunity to promote balanced development alongside the proposed SPS WCP. The development of the Project could result in the following benefits and bring in environmental initiatives:

Direct Benefits

- 2.5.1.2 **Develop into an international I&T Hub** –The Project, together with the Loop to the northeast, is positioned as the “San Tin Technopole”. Given its strategic location situated near SZ I&T Park and the proposed Futian Central Innovation District, it is critical to seize this unique opportunity to develop the Project area into the international I&T Hub to synergise with the I&T zone in SZ. As sustainable and long-term development of the I&T industry is essential to reach this target, some 212 ha land is planned for I&T use under the Project. Together with the 87ha of land of the

HSITP at the Loop, about 300ha I&T land would be provided for the development of San Tin Technopole. This would establish a complete and vibrant I&T ecosystem in Hong Kong.

- 2.5.1.3 **Diverse housing options to meet long-term housing needs of Hong Kong** – Different housing types will be provided to meet long-term housing needs of Hong Kong, engendering a sense of belonging for people and ultimately enhancing their quality of life. The Project will provide about 50,000 to 54,000 new flats, in which about 70% would be public housing. Besides, by providing talent accommodation that will be integrated within I&T development, this offers a level of convenience and accessibility that is highly attractive to talents. Village resite area is also provided to the re-provision of affected village houses/building lots under the Village Removal Terms due to the Government projects.
- 2.5.1.4 **Diversify economic base to serve the Northern Metropolis** – Approximately 165,000 or more new jobs would be generated upon full development of the Project, through a mix of I&T, commercial (office, hotel, RDE), retail, logistics, storage and workshop, community and government land uses. This would promote the growth of I&T industry and ecosystem, providing diversified job choices and economic activities, hence to become a prominent employment node.
- 2.5.1.5 **Provide GIC facilities** – To support both existing and planned population, as well as regional and territorial demand on specific aspects, a wide range of GIC facilities including educational, social welfare, sports, cultural and recreational, healthcare, youth facilities, etc. will be provided.
- 2.5.1.6 **Improving home-job balance to reduce cross-district commuting** – The Project is planned to become a prominent employment node. With the vast employment opportunities available in the Project, a higher level of self-containment could be achieved and in return minimising the need for cross-district commuting to improve home-job balance.
- 2.5.1.7 **Proposed infrastructures for future green transport** – GTS such as automated and green feeder services are proposed within the Project area. TIHs / PTI will be equipped with ancillary facilities to support the operation of future green transport systems. Corridor of the GTS has been identified within the Project area to connect other NDAs in Northern Metropolis. The carriageway and roadside amenity areas along the potential GTS route have been designed to allow for the operation of the potential GTS in the future.
- 2.5.1.8 **Facilitate development of modernized aquaculture industry** – With the provision of the AFCD Fisheries Research Centre within the I&T uses in the northern portion of the Project, there is potential benefit on the development and promotion of scientific research on aquaculture to facilitate the upgrading and transformation of the fisheries industries supporting the proposed SPS WCP.
- 2.5.1.9 **Improving air quality by removing existing odour sources** – A number of existing livestock farms, including seven pig farms and two chicken farms, will be removed. As operation of livestock farms could be odorous, the clearance of farms would remove these sources of odour emissions thus improving the overall air quality in the area.
- 2.5.1.10 **Improving the degraded area by rezoning brownfield sites for development** - Within the Project area, there are about 126 ha of brownfield, mainly concentrated south to the existing San Tin Highway, and some fronting the existing wetland areas. These brownfield sites are replanned comprehensively for residential, open space, GIC facilities and economic uses. Hence the Project would improve the degraded areas due to various brownfield operations, especially their interface with the villages and wetland.
- 2.5.1.11 **Sewerage system provision and reuse of reclaimed water**– The Project will improve sewerage infrastructure and sewage treatment facilities of the areas, which would benefit both the population generated by the existing and proposed developments. To promote sustainable use of water, the potential of using reclaimed water for non-potable purposes within the Project would be explored.

Environmental Initiatives

- 2.5.1.12 **Minimise industrial / residential interface** – At present, the proliferation of brownfield operations in Project area has created considerable environmental, traffic, visual, flooding and other problems. One of the objectives of developing the Project is to convert these brownfield sites to other uses with orderly developments and improve the overall environment of the area. Several sites located along Fanling Highway and San Tin Highway, as well as at Pang Loon Tei near the potential connection with the future Northern Metropolis Highway, are reserved for “OU(LSW)”. These sites would accommodate some of the existing brownfield operations through the possible development of MSBs or other land efficient means. These sites would help to alleviate existing industrial/residential interface issues resulting from existing brownfield operations. Upon development, HGV to and from these sites would have direct access to major existing and proposed highways thereby eliminating the needs for travelling through built-up areas.
- 2.5.1.13 **Walkability and cycling** – Walkability and cycling are the key elements for the Project. A comprehensive and attractive pedestrian walkway and cycle track network is planned throughout the Project area. Key destinations, such as key public transport nodes, major employment nodes and residential communities, would be linked up by pedestrian walkways, cycle track and open spaces. This would allow a safe, convenient and comfortable movement within the Project area and create local communities with easily accessible daily necessities to promote an active and healthy lifestyle to reduce mechanized vehicular trips and hence carbon emissions.
- **Comprehensive pedestrian network** – Comprehensive pedestrian network of the Project connects residential and employment nodes to provide continuous walkways for pedestrians. It could promote walking from homes to workplaces, retail and services, as well as the revitalised drainage channel for various purposes.
 - **Open space network / green linkages** – A series of open space corridors branching off the main comprehensive pedestrian network, including the open spaces along drainage channel and linear parks along major road. They shall provide additional pedestrian connections to the surrounding residential communities and employment areas, and further to the green and natural areas.
 - **Robust cycling network** – The Project provides a robust cycling network which link effectively to the existing and planned cycle tracks within and outside the Project. The proposed cycling network would connect to the existing cycle tracks from Yuen Long to KTN and the Loop to create a continuous cycling environment that extends to other destinations beyond the Project area. Routes within the Project would be provided parallel to the major roadways to serve commuting needs, as well as to provide some other routes within the proposed open space areas for leisure.
- 2.5.1.14 **Optimisation of ecological resources** – The core area of the Mai Po Lung Village Egretty within the Project area and Mai Po Village Egretty located to the western portion of the Project area will be preserved. Mai Po Village Egretty would be excluded from the Project area. The surrounding area of Mai Po Lung Village Egretty would be enhanced with provision of open space and NBA for bird flight corridor to promote ardeid use and enhance biodiversity. At the northern portion of the Project area adjacent to the Loop, NBA and building height control are stipulated to maintain the existing bird flight corridor for bird flight movement between the east and west. Wildlife corridors are proposed to facilitate movement of non-flying mammals. The principle of avoidance and minimisation for all other ecological resources have been considered in the development of the Revised RODP. Recommendation for compensation and enhancement have been provided as appropriate.
- 2.5.1.15 **Landscape buffer** – The proposed SPS WCP is adjacent to the Project. In this regard, a generous landscape buffer is proposed along the fringe area of “OU(I&T)” sites. They are proposed at area facing the proposed SPS WCP and between OU(I&T) and STEMDC area serving as natural landscape to create a sensible landscape transition between rural / natural assets and new developments. The landscape buffer is envisioned to have limited provision of recreation facilities to minimise human disturbance from lower activity level such that only appropriate landscape features for cyclist and pedestrian are proposed. The area would largely be characterised by natural habitats and natural trails where visitors are still welcome to the

landscape buffer to appreciate the nature, but at a lower interaction and activity level. Nonetheless, more active open space corridors are proposed alongside within the corresponding development parcels to facilitate seamless integration between different green environment along the public realm.

- 2.5.1.16 **River revitalisation** – Two main drainage channels (STEMDC and STWMDC) are proposed for revitalisation. Various treatments have been proposed, such as to maintain or restore existing wetland, to serve as green buffer or to be integrated within the public open space for public enjoyment. These proposals would bring positive impacts to the nature and future population of the Project.
- 2.5.1.17 **Preserve and promote cultural heritage resources** – No graded historic buildings and Declared Monuments is identified within the Project area. Nevertheless, a number of cultural heritage spots, such as buildings in the new list of proposed grading items, Declared Monuments, proposed monuments and Site of Archaeological Interest are identified around the Project area. In particular, a cluster of ancestral halls, temple and the Tai Fu Tai Mansion are located within the San Tin Seven Villages and a portion of Mai Po Site of Archaeological Interest is located within the western portion of the Project area. To better harness the cultural values of these cultural heritage sites, improved connectivity to existing villages and archaeological sites shall be designed, incorporating appropriate interfaces that foster integration between existing and new uses. This aims at creating a proper synergy that provides opportunities for heritage promotion and cultural tourism, ultimately resulting in an enhanced quality of life for the community as a collective benefit.
- 2.5.1.18 **Improve the infrastructures, transport connectivity and community services to the existing villages** – Existing villages can benefit from the comprehensive planning of G/IC facilities, an integrated open space network intertwined with blue-green elements, improved rail-and-road transport connectivity, and other infrastructure services brought by the Project. Water quality beneficial effect would be induced by providing new sewerage to the existing unsewered areas. These enhancements provide collective benefit and contribute to improving the quality of life within the existing villages.

Promoting Biodiversity

- 2.5.1.19 **Create liveable environment** - The landscape framework should be formulated based on the findings of the ecological survey. Below are the five core principles applied in the landscape framework: (i) Optimise key existing ecological capital where possible; (ii) Maximise green space coverage for habitat creation and leisure activities; (iii) Create linkages among habitats; (iv) Diversify landscape typologies through a rich mix of landscape characters and activities for both people and wildlife; and (v) Create a mutual respect culture between people and nature through design. While maintaining and enhancing ecological value of the Project, liveable environment will be reflected via the landscape network by creating a diverse set of natural habitats, leisure and recreation programs that caters for people of all ages, abilities, and backgrounds.
- 2.5.1.20 **Robust landscape network to promote biodiversity** – The landscape areas are presented in a network format to form a robust landscape network. The form and alignment of this network considers the following: (i) Ensuring that the retained ecological capital are not cut off or engulfed by urban components where possible; (ii) Maximising areas for potential greenery with an aim to create diverse habitats within the landscape network; (iii) Ensuring the network connects with adjacent woodlands, wetlands, and essential habitats to support wildlife movements where appropriate and possible; (iv) Synergy with adjacent land usage to lay foundation for future landscape design; (v) Relating future leisure and recreational provisions to the overall urban design; and (vi) Promoting walkability within the Project area through open space.

2.6 Formulation of Revised RODP

- 2.6.1.1 The Revised RODP has evolved from the RODP, taking into account the latest planning vision and positioning, technical assessments and the outcome and findings of the public engagement (PE) exercise. These are discussed in the following sections.

2.6.1.2 A 2-month PE was conducted from 6 June to 5 August 2023 (PE Period) to solicit public views on the RODP. During the PE period, the project team conducted seven roving exhibitions in Hong Kong and SZ, and arranged mobile exhibition centre. In addition, a total of 12 briefings sessions / meetings were conducted. Apart from various statutory and advisory bodies (including Town Planning Board, Planning Sub-committee of the Land and Development Advisory Committee, Yuen Long District Council and Heung Yee Kuk), the project team also met the I&T sector, professional institutes and green groups. Briefing sessions were arranged for local stakeholders with over 500 attendees, including San Tin Rural Committee, affected villagers, business operators and owners of brownfield operations, fishponds, agricultural businesses and livestock farms. A project website was also launched to ensure effective dissemination of information related to San Tin Technopole.

2.6.1.3 Comments received during the PE exercise can be broadly categorised in five major aspects, including I&T development, land use planning & urban design, transport & infrastructure, environment, ecology & landscape, and implementation arrangement. The key environmental and ecological related comments received from the public during the PE are summarised in **Table 2.2**.

Table 2.2 Summary of Key Concerns Related to Environment

Key Issue	Public Concerns	Responses
<i>Sustainability and Climate Resilience</i>	Sustainability should be a key consideration during the planning process. Measures to mitigate possible impacts from climate change, global warming and heat island effect should be recommended.	<ul style="list-style-type: none"> To align with the call of Hong Kong's Climate Action Plan 2050 (HK's CAP2050), the Project would adopt smart and sustainable mobility with green transport modes. Blue-green infrastructure with water bodies, tree canopies and vegetations, as well as breezeways have been incorporated in the planning design to mitigate the heat island effect.
<i>Ecology and Wetland Conservation</i>	Details for preservation of ecological corridor and bird flight path at the north of San Tin Technopole should be provided. Some considered that although the planning of San Tin Technopole would safeguard the flight path of migratory birds, it would destroy their habitats.	<ul style="list-style-type: none"> In view of the habitat loss under the Project, appropriate mitigation measures (including compensation of wetland habitats and minimisation of disturbance) have been proposed to include the wetland habitats and associated bird species. Details are laid down in Section 10 and 11 of this EIA Report.
	Information on wetland affected by the development of San Tin Technopole including their locations and area, and compensation arrangements for the loss of wetland should be provided. Some considered not acceptable to have the wetland loss of about 150ha. The Government should demonstrate that there would be "no-net-loss in wetland" arising from the development of San Tin Technopole. Information should be provided to justify the need for affecting a large area within the WCA.	<ul style="list-style-type: none"> Under the Project, appropriate enhancement measures have been proposed on the loss of habitat, to compensate the loss in ecological function and capacity of wetland habitats arising from the Project, including wetland compensation measures such as consolidating smaller ponds, reprofiling pond banks, creating habitat islands, adopting modernised aquaculture, to be implemented in SPS WCP. Details are available in Section 10 and 11 of this EIA Report.

Key Issue	Public Concerns	Responses
	<p>Concern on the population of Eurasian Otters and their associated habitat that would be impacted under the pond filling works under San Tin Technopole.</p>	<ul style="list-style-type: none"> No individuals of Eurasian Otter were sighted from ecological surveys under the EIA Study. Provision to cater for the potential population of Eurasian Otters such as wildlife corridor have been considered. Details are available in Section 10 of this EIA Report.
<p>Interface with the Ramsar Site</p>	<p>Interface with the Mai Po Inner Deep Bay Ramsar Site which was recognised as a Wetland of International Importance.</p>	<ul style="list-style-type: none"> A piece of land of 980 m², which is currently occupied by temporary structures and without any ponds, at the easternmost tip of the Mai Po Inner Deep Bay Ramsar Site was originally included in the RODP. While this piece of land is intended to be part of the proposed landscape buffer (designated as NBA) between the I&T Park and SPS WCP on the RODP, in view of the concern on the encroachment onto the Ramsar Site, the project boundary has been revised to exclude the said piece of land.
<p>Impact on agricultural land</p>	<p>Loss of unique values of traditional farming such as landscaping and ecological functions which could not be replaced by hydroponics or vertical farming in the proposed urban farm.</p>	<ul style="list-style-type: none"> About 7 ha of farmland was originally proposed to be retained, but there were views querying the need for such agricultural land in the central part of the new development area and considering it incompatible with the overall positioning and land use planning of the area. To optimise the land resources, the site is now planned for a cultural and recreational complex and open space. With 55 ha of open space earmarked for San Tin Technopole, a site reserved for “Urban Farm” has been incorporated as part of the open space to provide greater flexibility and to optimise the functions of open space for public enjoyment.
<p>Landscape proposal</p>	<p>Suggestions to introduce more landscape and streetscape treatments to add vibrancy and diversity to the character of San Tin Technopole.</p>	<ul style="list-style-type: none"> The detailed landscape design will be considered at the detailed design stage of the Project.
<p>Validity of EIA Study Brief</p>	<p>Replacement of EIA Study Brief due to expansion of project boundary, which includes the adjustment of assessment period,</p>	<ul style="list-style-type: none"> EPD has confirmed that the EIA Study Brief issued in June 2021 remains applicable for the latest Project area as all the potential

Key Issue	Public Concerns	Responses
	sampling method and the assessment area for the expanded project boundary.	environmental issues which need to be assessed under the EIA study are already covered in the Study Brief, and that the study approach and details of the methodology such as sampling, duration and frequency of the ecological survey therein remain valid.

2.7 Major Amendments from RODP to Revised RODP

2.7.1 Major Amendments from RODP to Revised RODP

2.7.1.1 Taking into account the public views collected in PE and further assessments, the following refinements to the RODP are proposed.

2.7.1.2 The changes include refining the project boundary to avoid encroachment onto the Ramsar Site, incorporating the “Urban Farm” site as part of the “O” zone, rezoning part of the road to “O” zone to reflect the continuous open space beneath it, rezoning a site near the alignment of NOL Spur Line to “Government, Institution or Community”, etc.

2.7.2 Comparison of Development Parameters of RODP and Revised RODP

2.7.2.1 As a result of the abovementioned changes, the development parameters have been updated and summarised in **Table 2.3**.

Table 2.3 Comparison of Key Development Parameters between RODP and Revised RODP

	RODP	Revised RODP
Area	~611 ha	~610 ha
Population	~147,000 to 159,000	
Estimated Employment	~165,000	
No. of flats	~50,000 to 54,000 (with ~70% public housing)	

2.8 Consideration of Alternatives and Development of the Preferred Option

2.8.1 Consideration of No Development Scenario

2.8.1.1 Under the “no development” scenario for the Project, the area would remain in its present state. As a result, no strategic land parcels in the adjacent areas of the Project would be developed to provide housing to meet the increasing population. In addition, the present mix of non-compatible land uses (e.g. village houses located next to brownfield operations including open storage or port backup areas with limited strategic planning) would remain. The current living environment would also remain unchanged, which includes traffic congestion and unpleasant landscape and streetscape without fully utilize the land resources.

2.8.1.2 However, there is shortage of land supply for I&T and housing development in Hong Kong leading to an urgent need to have strategic sites for I&T and housing as well as associated infrastructure provisions and other facilities. As a result, development within this part of Hong Kong would not only bring social, economic and environmental benefits to the local community but also to the whole territory. Without the Project, the developments would also be scattered within the region without any strategic planning. This could further decrease the quality of the living environment than the present unacceptable situation.

2.8.2 Consideration of Alternatives for Road P1 Alignment

2.8.2.1 The proposed elevated Road P1 was initially planned to run on the at-grade level. The existing down ramps from the elevated STI connecting the existing San Sham Road were originally planned to be retained i.e. traffic from STI would merge with traffic coming from Castle Peak Road, slip road from eastbound of San Tin Highway, and slip road from westbound of Fanling Highway at the at-grade level before the junction of Road P1 / Road D4 / Road L15 and continues to travel along the at-grade level to the northern end of San Sham Road. The initial alignment for Road P1 is shown in [Appendix 2.4](#).

2.8.2.2 During the planning process of the Project's road network, suggestions were received from the Innovation, Technology and Industry Bureau (ITIB) and the Innovation and Technology Commission (ITC) to provide an undisturbed corridor to connect with SZ in the Project. Taking into account their suggestion, the current proposal of elevated Road P1 with Road D6 running along the at-grade level beneath Road P1 was formed.

2.8.3 Consideration of Alternatives for Protection of Mai Po Lung Village Egretty

2.8.3.1 The initial layout of SWWI takes the form of an elevated roundabout located above San Tin Highway with slip roads connecting San Tin Highway and down ramps joining Road L11 and Road L5 at the north and south of San Tin Highway respectively. However, this option will bring direct impact to the Mai Po Lung Village Egretty which may lead to potential abandonment of the egretty and disturbance to the flight path used by the ardeids. The initial layout of SWWI is shown in [Appendix 2.6](#).

2.8.3.2 To minimise impact to the egretty, the layout of SWWI was revised and positioned underneath San Tin Highway making use of the existing Shek Wu Wai Road with slip roads connecting San Tin Highway and up ramps joining Road L11 and Road L5. Road D3 has been shifted to the east, while the proposed Road L11 and L12 connecting to the existing Castel Peak Road have been shifted to the south. With the re-alignment of roads layout, the configuration of the adjoining land parcels has been adjusted. The proposed open space (Site O.1.3 under RODP) was expanded to include the Mai Po Lung Village Egretty. A NBA is designated at the OU(I&T).1.1.3 to the north of the Egretty to preserve the southeast-northwest flight corridor of the ardeids.

2.8.4 Consideration of Alternatives for STLMC EPP location

2.8.4.1 An EPP is required for the Project to treat about 125,000 cum/d of Average Dry Weather Flow (ADWF). An EPP with a preliminary estimation of about 10.7 ha is proposed to accommodate the design flow in the Project. The effluent from EPP will be further treated in a WRP to provide flushing water and other potential non-potable uses including DCS and irrigation. A 1-ha food waste pre-treatment facility is also proposed to serve the development of nearby New Territories. Considering the synergy in terms of similar nature of sewage and food waste infrastructures, co-location of EPP and the food waste pre-treatment facilities is recommended with a total of 11.7 ha. Co-location of WRP in the vicinity of EPP is also recommended in terms of energy efficiency and cost-effectiveness. The alternative locations of the EPP are indicated in [Appendix 2.5](#).

Option 1 – South of SPS WCP

2.8.4.2 Under this option, the land area requirement is satisfied but is incapable to complete by the first population intake under Initial Phase in Year 2031. According to the preliminary construction and population intake schedule ([Appendix 2.1](#)), the site formation works at this land area shall commence in 2028 earliest with an anticipated 5-year construction period to commission in Year 2036 due to land resumption of private lands/ponds would be required. In addition, this land use arrangement would impair comprehensiveness of the proposed San Tin North I&T Park at the north of San Tin Highway and the planning intention of development of a prominent I&T park alongside the wetland.

Option 2 – Southwest of Shek Wu Wai Interchange

- 2.8.4.3 The land area is located at the south-western portion of the Project in close proximity of the existing Shek Wu Wai Village and situated alongside existing San Tin Highway and Shek Wu Wai Interchange. It is sufficient to accommodate the 11.7-ha co-location of facilities and capable to commission in time by Year 2031. This land mostly comprises of government lands. According to the preliminary development phasing plan, the site formation works at this land area shall commence in 2024 earliest with an anticipated 2.5-3 years of site formation works in addition to 5 years of facilities construction period to commission in Year 2031. Located closer to the town centre and high-density residential clusters of the Project, it allows a shorter sewerage pipe route and higher efficiency of sewage pumping. Buffer distance between EPP and nearby air-sensitive receivers (ASRs) would be maintained so that no odour nuisance to ASRs would be envisaged. Moreover, the EPP is a noise tolerant use providing a buffer for other noise-sensitive land uses from San Tin Highway.

Option 3 – NTM Cavern Area

- 2.8.4.4 From land use point of view, the cavern option enables relocation of the facility from the Project area to the NTM cavern area, reserving developable land for other priority uses, but with high cavern development cost and excessive C&D material generation.
- 2.8.4.5 Considering the synergy of the co-digestion process, the co-location of EPP, WRP and food waste pre-treatment facilities is preferable. However, given the development of cavern could provide sufficient footprint to co-locate the EPP, WRP and food waste pre-treatment facilities, it is a confined area in which no dangerous goods shall be stored. This is because the ultra-filtration and chlorine contact tanks in WRP and digestors in EPP cannot be placed in the cavern as they are sensitive to the surroundings. Besides, locating the EPP inside cavern is also not recommended due to the emergency bypass at upstream which may cause potential environmental impact.

Selected Option – Brief Assessment

- 2.8.4.6 Out of the three options, only Option 2 is capable to meet the programme requirement to commission by Year 2031 without posing safety hazards. In addition, in view of the land use efficiency for holistic planning, operation consideration, financial consideration, environmental considerations, Option 2 is preferred and considered as the more suitable site for the co-location of EPP and the food waste pre-treatment facilities.

2.8.5 Consideration of Alternatives for Fresh Water Service Reservoir and Reclaimed Water Service Reservoir Locations

- 2.8.5.1 A FWSR and RWSR are required to meet the increased fresh water and flushing water demand due to new population and employment in the Project. RWSR is proposed for flushing purpose as salt water is not available in the Project and it will store the treated water from the WRP.
- 2.8.5.2 It is anticipated that the new FWSR and RWSR should maintain a minimum residual head under peak-flow conditions of 20m and 15m respectively. The alternative locations of proposed FWSR and RWSR are indicated in **Appendix 2.3**.

Option 1 – Pang Loon Tei

- 2.8.5.3 In this option, geotechnical works such as site formation works (mainly excavation works) in relatively massive scale shall be required for construction of water reservoirs and associated infrastructures including roads and drainages. The proposed levels of the water reservoirs are much higher than the level of the closest road of more than 35m height difference. Thus, a long stretch of at-grade road shall be needed to climb up to the designated level.
- 2.8.5.4 This option is situated in hilly terrain located in Conservation Area zone with key ecological resources including site of conservation importance, natural terrestrial habitats, and fauna species of conservation importance recorded in nearby wooded habitats. The proposed

development of water reservoir would result in the direct loss of the grassland and shrubland habitats and vegetation within Conservation Area, and subsequently cause potential habitat fragmentation from decreased connectivity of nearby natural habitats. Indirect disturbance impacts may also arise during both construction and operation phases resulting in further habitat deterioration and displacement of wildlife in Conservation Area and nearby natural habitats.

Option 2 – Ngau Tam Shan

2.8.5.5 Considering the topography in the vicinity of this option, smaller scale of geotechnical works shall be encountered for construction of water reservoirs and associated infrastructures. This option encroaches into the permitted burial ground (PBG) and may cause impact to the graves in PBG. The level of the closest road is relatively similar to the proposed levels of the water reservoirs with about 20m height difference. Therefore, a shorter route shall be required to reach the designated level.

2.8.5.6 The proposed development at this location would result in the loss of mixed woodland, plantation, grassland and shrubland habitats and the vegetation. No species of conservation importance were recorded in this area and in the immediate vicinity. While disturbances to nearby habitats may be arised from construction and operation phases.

Selected Option – Brief Assessment

2.8.5.7 Compared with Option 1, Option 2 provides the greatest geotechnical and civil benefits as well as the least environmental disturbances, it is therefore preferred to locate the FWSR and RWSR at Ngau Tam Shan.

Table 2.4 Comparison of Benefits and Dis-benefits for FWSR and RWSR Locations

	Dis-benefits	Benefits
Option 1	<ul style="list-style-type: none"> • Massive scale of geotechnical works • Greater level difference between the ends of the access road resulting in an extended road alignment • Located within Conservation Area with key ecological resources • Direct loss of grassland and shrubland habitats and vegetation • Potential habitat fragmentation from decreased connectivity of nearby natural habitats 	<ul style="list-style-type: none"> • Avoid graves clearance within PBG
Option 2	<ul style="list-style-type: none"> • Loss of woodland, plantation, grassland and shrubland habitats and the vegetation • Potential impact to graves 	<ul style="list-style-type: none"> • Smaller scale of geotechnical and civil works • No direct impacts to species of conservation importance • No direct impact to sites of conservation importance

2.8.6 Consideration of Location for Refuse Transfer Station

2.8.6.1 When considering the location of RTS, factors such as distance from sensitive use such as residential areas, and distance from other major planned odour emission sources such as EPP were considered. The alternative locations of the RTS are indicated in **Appendix 2.8**.

Option 1 – NTM Cavern Area

- 2.8.6.2 From land use point of view, the cavern option enables relocation of the facility from the Project area to the NTM cavern area, reserving developable land for other priority uses, but with high cavern development cost.
- 2.8.6.3 In terms of the implementation programme, the construction period of cavern formation and subsequent RTS would take more than 5 years and 3 years respectively after obtaining the required EP. It is envisaged that the RTS and RRF shall only commission in Year 2037, which is incapable to support the first population intake in Year 2031.

Option 2 – Eastern Part of the Project Area Along the Fanling Highway

- 2.8.6.4 The proposed location as described in **Section 2.4.5.13** is in the vicinity land uses for logistics, storage and workshop and San Tin Highway and adjacent to hilly terrain. It provides a buffer for sensitive uses from potential odour impact. With reference to **Appendix 2.1**, the development at the proposed location will commence under the Initial Phase and complete by 2031 to support the first population intake.

Option 3 – Southwest of Shek Wu Wai Interchange

- 2.8.6.5 Under this option, the RTS is capable to complete by the first population intake under Initial Phase in Year 2031, but the land area requirement is not satisfied. It comprises an area of about 1 ha. Being located close to various sensitive uses such as residential sites, odour impact would be anticipated.

Option 4 – Pang Loon Tei

- 2.8.6.6 The proposed location is close to the future Northern Metropolis Highway. It provides a short and direct route to/from the RTS enhancing convenience and serves as a buffer for sensitive uses from potential odour impact. However, the land is envisaged to operate after Year 2034, which is incapable to support the first population intake in Year 2031.

Option 5 – Ngau Tam Mei Development Area

- 2.8.6.7 As the proposed location is outside of the Project area, it is subject to the implementation programme of the Ngau Tam Mei Development Area. In view of the urgency to operate in Year 2031 to support the first population intake, this option is not recommended due to substantial uncertainties.

Selected Option – Brief Assessment

- 2.8.6.8 Despite the large-scale footprint available under Option 1, 2, 4 and 5, only Option 2 is capable to meet the programme requirement to commission by Year 2031. Option 2 to locate the RTS at the eastern part of the Project area along the Fanling Highway is also more favourable in terms of financial, land use efficiency for holistic planning.

2.8.7 Consideration of Design Options / Alternatives for Site Formation Works

- 2.8.7.1 According to the site formation levels shown in the RODP, there are level differences between the existing roads and proposed sites and roads. Specific retaining measures shall be provided for the site formation works and to maintain the elevation differences between land parcels, existing and newly proposed roads, and the site boundary.

Option 1 – Cut Slope (with or without soil nailing)

- 2.8.7.2 A straightforward option is to trim the existing ground profile with designed angle. The excavated soil would be reused for backfilling in other development sites within the Project.

- 2.8.7.3 However, the formed slope may occupy a large area of land and restrict the available levelled area for development. Therefore, different formation profiles can be achieved by controlling the cutting angle which are typically ranged between 30° and 45° to allow for planting of grass, trees and shrubs on the slope surface.

Option 2 – Fill Slope

- 2.8.7.4 Another option to support elevation difference is to form fill slopes when a raise in platform is required. If found suitable, excavated soils from nearby stockpiling or cutting works can be reused.
- 2.8.7.5 Since soil fabrics is not preserved in disturbed soil, fill slopes are usually formed at a gentler gradient when compared to cut slopes. A typical filling angle of 26.5° can generally be stable without the need of reinforcement and allow planting of grass, trees and shrubs on the slope surface. Alternatively, steeper gradient or even sub-vertical profile can be achieved by adopting the reinforced fill technique associated with suitable wall finishing panels. However, steeper gradient may cause restrictions, to a certain extent, on the vegetation growth on slope face.

Option 3 – L-shaped Retaining Wall

- 2.8.7.6 One other option to maintain elevation difference vertically is to adopt conventional L-shaped R.C. retaining wall. Soils excavated from temporary cutting can be reused for backfilling behind the wall face.
- 2.8.7.7 However, soft landscape on the wall face is difficult and may incur high future maintenance cost. The appearance of the wall may need to be improved by providing features in the finished face or decorative facings.

Option 4 – Cantilevered Pile Retaining Wall

- 2.8.7.8 Another option is to install cantilevered pile wall to retain the level difference between the proposed sites and existing roads, to maximise the land use of the development sites. Cantilevered pile wall is best suited when soil nailing is not permitted and if greater retained height is required in areas with limited space allowed for the retaining structures.
- 2.8.7.9 It is however noted that cantilevered pile wall will involve piling works that export of large quantities of excavated material may trigger higher construction traffic volume and poses more adverse dust and noise impact to the surrounding residents. Besides, piling works will incur much higher construction cost, in particular when large diameter bored pile is adopted.
- 2.8.7.10 Similar consideration as in L-shaped retaining wall is applicable.

Option 5 – Tie-back Wall

- 2.8.7.11 Tie-back wall is an effective design approach for retaining wall. By providing intermediate tie-back anchors/soil nails, the retaining height of retaining wall can be enhanced.
- 2.8.7.12 However, similar to soil nailing in slopes, tie-back anchors/soil nails may restrict the development flexibility at the wall top. This is not a major issue if anchors/soil nails are intruded into natural hillside when permitted.
- 2.8.7.13 Similar consideration as in L-shaped retaining wall is applicable.

Selected Option – Brief Assessment

- 2.8.7.14 Generally, for most of the site development, Option 1 cut slope and Option 2 fill slope with less excavation can minimise the C&D material generation. However, in some other development sites where the land is limited, the size of the land formed will be smaller than the required footprint for the development when adopting the Option 1 and 2. Option 3 L-shaped retaining wall, Option 4 cantilevered pile retaining wall and Option 5 tie-back wall may be more preferable for

providing more land for development subject to various retaining height. The recommendations of site formation works (Options 1-5 or other options) should be taking into consideration of environmental friendliness, practicability of works, cost effectiveness etc. during detailed design of the Project.

Table 2.5 Comparison of Benefits and Dis-benefits for Site Formation Works Options

	Dis-benefits	Benefits
Option 1 – Cut Slope	<ul style="list-style-type: none"> Less spaces available for development of smaller site as the slope would occupy a significant footprint 	<ul style="list-style-type: none"> Slope can be formed in a relatively short period of time Surplus of soils/rock resulted from slope trimming can be reused for backfill and other purposes Vegetation growth is more possible
Option 2 – Fill Slope	<ul style="list-style-type: none"> Less spaces available for development of smaller site as the slope would occupy a significant footprint 	<ul style="list-style-type: none"> Slope can be formed in a relatively short period of time Rock material unsuitable for other construction purposes can be used as backfill Vegetation growth is more possible
Option 3 – L-shaped Retaining Wall	<ul style="list-style-type: none"> Vegetation growth is difficult and incur high maintenance cost 	<ul style="list-style-type: none"> Vertical wall face can be formed to maximise development area Economical design can be achieved as the self-weight of backfill is used to stabilise the wall.
Option 4 – Cantilevered Pile Wall	<ul style="list-style-type: none"> Relatively costly for constructing cantilevered pile wall, in particular large diameter bored piles Heavy plants and equipment for construction Vegetation growth is difficult and incur high maintenance cost 	<ul style="list-style-type: none"> Ability to retain greater height Maximised development area on both sides of the retaining wall.
Option 5 – Tie-back Wall	<ul style="list-style-type: none"> Tie-backs may be restricted by the development at wall top Vegetation growth is difficult and incur high maintenance cost 	<ul style="list-style-type: none"> Ability to retain greater height economically

2.8.8 Consideration of Alternatives for District Cooling System

Option 1 – Conventional A/C Cooling

2.8.8.1 For a development area with different kinds of commercial use, conventional air-conditioning system using chiller plant & cooling tower will be implemented for each building premise. The local A/C cooling plant will provide central air-conditioning for cooling the internal space of the entire premise. Each premise will include a central chiller plant, outdoor cooling tower plant for heat rejection and air-handling units to distribute cooling to individual rooms. A/C makeup water is required for the cooling towers to replace the water loss due to evaporation loss, drift loss and bleed off. Bleed off water from the cooling tower will be discharged to retention tank before discharge to the public sewerage system.

Option 2 – District Cooling System

2.8.8.2 Instead of providing dedicated chiller plant and cooling tower plant for each premise, a large-scale centralized air-conditioning system or district cooling system comprising chiller plant and cooling tower plant is proposed to deliver cooling water to buildings within a district via underground insulated pipeline. In this regard, plant spaces for chiller plant and cooling tower plant are no longer required for individual premises. The chillers used for district cooling is of large scale and is more energy efficient than the localised air-conditioning system. The maximum pipe run between each DCS plant to the targeted consumer building will be limited to 2km which is aimed to minimise the pipe laying cost and to achieve maximum effect of energy efficiency. A/C makeup water is required for the cooling towers to replace the water loss due to evaporation loss, drift loss and bleed off. Bleed off water from the cooling tower will be discharged to retention tank before discharge to the public sewerage system. Reuse of bleed off water will be further assessed to minimise the freshwater consumption.

Selected Option – Brief Assessment

2.8.8.3 Based on cost-benefit analysis of both Options, District Cooling System is preferred than Conventional A/C Cooling.

Table 2.6 Comparison of Benefits and Dis-benefits for District Cooling System

	Dis-benefits	Benefits
Option 1 – Conventional A/C Cooling	<ul style="list-style-type: none"> • Lower energy efficiency • Higher demand on water consumption • Higher capital cost and operation cost 	<ul style="list-style-type: none"> • Individual air-conditioning system owned by developer
Option 2 – District Cooling System	<ul style="list-style-type: none"> • Centralised district cooling system owned and managed by government 	<ul style="list-style-type: none"> • Higher energy efficiency • Lower demand on water consumption • Lower capital cost and operation cost

2.8.9 Development Options of a New WRP

2.8.9.1 A new WRP will be constructed to support the population of the Project. The capacity of the WRP is proposed to be around 112,500 m³/day. Considering the synergy of the reclamation process knowing that the source of the WRP is the effluent of the EPP, it is preferred to locate adjacent to the EPP. It is also beneficial in terms of energy efficiency and cost-effectiveness. The proposed locations of the EPP are indicated in [Appendix 2.7](#) and further elaborated in terms of environmental in [Section 8.9.3](#) to [8.9.5](#).

Option 1 – Southwest of Shek Wu Wai Interchange

2.8.9.2 Under this option, the available land area is approximately 1.2 ha. However, due to population intensification, a greater design capacity of secondary service reservoir is required to cater for the additional water demand. It is estimated that a footprint of 3 ha or more is needed to accommodate the expanded WRP. As the land area requirement cannot be met, this option is not preferred.

Option 2 – South of Shek Wu Wai Interchange

2.8.9.3 This option has a footprint of over 3 ha which provides sufficient land area to accommodate the expanded WRP. Considering the proposed location under this option, where the WRP is sited adjacent to the EPP, enables synergy of the reclamation process. The proposed location is also assessed to cause no insurmountable technical problem. In addition, based on the tentative construction programme ([Appendix 2.2](#)), the site formation works at this land area shall commence in Q4 2024 for commission of the WRP by 2031 which is capable to support the first population intake.

Option 3 – Near the Service Reservoirs (SRs) at Tam Mei Shan

- 2.8.9.4 Similar to Option 2, this option comprises a large footprint which is sufficient to accommodate the expanded plant and commission by 2031 without posing any insurmountable technical problem. However, the proposed location, situated at Tam Mei Shan, which is far away from the EPP, poses more energy requirement from the pumping process of effluent from EPP compared with Option 2, and would generate substantial C&D materials from the site formation works of the WRP.

Selected Option – Brief Assessment

- 2.8.9.5 Both Option 2 and 3 comprises a greater footprint which is sufficient to accommodate the expanded STLMC WRP and commission by 2031 to serve the first population intake without causing any insurmountable technical problem. In view of the synergy of the reclamation process, Option 2, which is located close to the EPP, is recommended. This Option is also beneficial to avoid generation of substantial C&D materials.

2.8.10 Consideration of Alternatives for River Revitalisation Works of STEMDC

- 2.8.10.1 The STEMDC is proposed for revitalisation. Various treatments have been proposed, such as to maintain or restore existing wetland, to serve as green buffer or to be integrated within the public open space for public enjoyment. These proposals would bring positive impacts to the nature and future population of the Project.

Option 1- Existing profile

- 2.8.10.2 Under this option, the STEMDC will remain its existing profile and condition with concrete/grasscrete finishes and low-medium quality of the vegetation/ wetland habitat along the downstream of STEMDC. In order to meet the end century flood risk requirement, the proposed site formation will further segregate people physical and visual connection to the channel and undermine the full potential of developing an integrated blue-green infrastructure and connections for people and wildlife. Hence, this option is not preferred.

Option 2- Hybrid profile and natural embankment

- 2.8.10.3 Under this option, the STEMDC is proposed to be revitalised. The eastern bank is proposed to be converted into a natural embankment (targeting a 1:4 slope aspect) to enhance planting opportunities and habitat creation. Where possible, landscape islands are introduced within the waterway to break visual monotony and provide birds more places to roost. Plant and tree coverage are diversified on the slope, which is connected to the 20-meter-wide landscape buffer, to form a transition between the rural setting and contemporary built environment. In order to maximise the freshwater habitat, the western bank is proposed at a steeper gradient with gabion finishes. This allow opportunities for aesthetic finishes and habitat creation to be incorporated along the gabions bank.

Selected Option – Brief Assessment

- 2.8.10.4 The location of STEMDC is adjacent to the I&T land use and in relation to other environmentally sensitive consideration, such as the bird flight corridor, existing mitigation wetland and fishpond. In view of the environmental, landscape and visual considerations, Option 2 is preferred and considered as the more suitable option to optimise the potential of the channel.

2.9 Key Environmental Outcomes

- 2.9.1.1 **Table 2.7** presents the key environmental problems that have been avoided and any sensitive areas protected by environmentally friendly options in the development of the Revised RODP.

Table 2.7 Summary of Key Environmental Problems Avoided and Sensitive Areas Protected

Design Approaches	Environmental Problems Avoided and Sensitive Areas Protected
Avoidance of impact on core area of Mai Po Lung Village Egretty and protection of the birds' flight path	<ul style="list-style-type: none"> The core area of MPLV Egretty would be retained and protected in "O". A 70m wide NBA to the north of MPLV Egretty would be designated to protect the flight paths for birds.
Avoidance of impact on Mai Po Village Egretty and protection of the birds' flight path	<ul style="list-style-type: none"> MPV Egretty falling outside of the Project boundary would be retained and not be affected. Most bird flight paths would not be affected by the Project while some bird flight paths would also be protected by 35m wide NBA at the western fringe of the I&T site and restricting the building height of AFCD Wetland Conservation Park Management Office to 2 storeys.
Reprovision of San Tin Open Storage Area Night Roost at "O" along the bank of the diverted STWMDC and Ha Wan Tsuen Night Roost at an area adjacent to the proposed AFCD Fisheries Research Centre	<ul style="list-style-type: none"> To compensate the two affected night roosts (San Tin Open Storage Area Night Roost and Ha Wan Tsuen Night Roost) located within the Project area
Preservation of a 300m-wide bird flight corridor between LMC Meander and Sam Po Shue (i) Providing 20m and 35m wide NBAs at I&T sites and imposing stringent building height control ($\leq 15\text{mPD}$) along the 300m wide bird flight corridor (ii) Restricting building height adjacent to the 300m wide bird flight corridor to 35mPD	<ul style="list-style-type: none"> To protect the east-west bird flight corridor near the Loop
Provision of 35 wide NBAs along the development boundary fronting Sam Po Shue with building height restrictions (35mPD / 15mPD) descending towards the NBAs	<ul style="list-style-type: none"> NBA serving as "eco-interface" together with descending building height restrictions would minimise the disturbance impact on wetlands in Sam Po Shue
Enhancement of wetlands at Proposed SPS WCP	<ul style="list-style-type: none"> The ecological function and capacity of wetlands in Sam Po Shue would be enhanced under the Proposed SPS WCP
Provision of Fisheries Enhancement Area at Proposed SPS WCP	<ul style="list-style-type: none"> The fisheries resources of the proposed SPS WCP would be enhanced
Provision of AFCD Fisheries Research Centre	<ul style="list-style-type: none"> Allow promotion of scientific research on aquaculture to facilitate the upgrading and transformation of the fisheries industries supporting the proposed SPS WCP
Revitalisation of mitigation wetland and provision of 20m wide NBA along STEMDC	<ul style="list-style-type: none"> STEMDC would be revitalised to enhance biodiversity The NBA could serve as "eco-interface" to minimise disturbance on the revitalised mitigation wetland and promote wildlife usage

Design Approaches	Environmental Problems Avoided and Sensitive Areas Protected
Revitalisation of STWMDC	<ul style="list-style-type: none"> STWMDC will be revitalised to serve as green buffer and enhance biodiversity
Provision of wildlife corridors	<ul style="list-style-type: none"> Wildlife corridors are proposed to mitigate habitat fragmentation and maintain the movement corridor for non-flying mammals including species of conservation importance
Avoidance of encroachment on the existing recognised villages	<ul style="list-style-type: none"> Existing recognised villages including Shek Wu Wai, Chau Tau Tsuen, Tung Chun Wai, Yan Shau Wai, On Loong Tsuen, Wing Ping Tsuen, Fan Tin, San Loong Tsuen and Ching Loong Tsuen would be preserved
Avoidance of encroachment on cultural heritage resources	<ul style="list-style-type: none"> No Declared Monuments and Graded Historic Buildings within the Project boundary Declared Monuments and Graded Historic Buildings in the vicinity of Project boundary would not be affected
Reuse of treated sewage effluents	<ul style="list-style-type: none"> To reduce amount of effluent discharge from the new EPP thus minimise pollution loading to Deep Bay
Clearing of existing odour sources	<ul style="list-style-type: none"> All livestock farms within the Project boundary will be removed
Avoidance of direct impacts on natural watercourse	<ul style="list-style-type: none"> The natural watercourse near the woodland habitat at Pang Loon Tei would be retained
Providing greening to create natural carbon sink	<ul style="list-style-type: none"> Green coverage would be increased to include vertical greening and multi-layered green space
Providing sustainable transport infrastructure to promote low-carbon living	<ul style="list-style-type: none"> Pedestrian-friendly environment and robust cycling network are proposed to promote walkability and cycling for low-carbon living

2.10 Development Programme for the Project

2.10.1 Development Phasing

2.10.1.1 The Project would be commissioned in phases with the first population intake in Year 2031. The construction work is targeted to commence in Year 2024 and be completed by Year 2039 for full population intake. The preliminary construction schedule under various phases is summarised in **Table 2.8** with reference to **Appendix 2.1**. The construction programme is presented in **Appendix 2.2**.

Table 2.8 Preliminary Construction and Population Intake Schedule

Development Stage	Area	Rationale of Phasing	Earliest Date for Commencement of Infrastructure Works	Earliest Date for Availability of Land for Building Works	Anticipated First Occupation/ Population Intake Date
Initial Phase	North-east of the Project area including Government land, I&T land, LSW land, infrastructures, etc; West of the Project area including Residential,	- Key infrastructures - Areas with road connection from existing road network	End 2024	2026	2031

Development Stage	Area	Rationale of Phasing	Earliest Date for Commencement of Infrastructure Works	Earliest Date for Availability of Land for Building Works	Anticipated First Occupation/ Population Intake Date
	Government land, LSW land, Effluent Polishing Plant, Service Reservoirs, other infrastructures, etc.				
Main Phase	North-west of the Project area including mainly I&T land; South of the Project area including Residential, Government land, I&T land, infrastructures, etc.	- To commence infrastructure works for targeted population intake	2026	2029	2034
Remaining Phase	Area surrounding San Tin Station and proposed station near Chau Tau including Residential, Mixed Use and Government land	- Remaining works to suit the programme of other interfacing works	2032	2034	2039

2.10.2 Initial Phase

2.10.2.1 Initial phase comprises mainly the residential sites for the first population intake in Year 2031, first batch of lands for Innovation and Technology (I&T) use and the key supporting infrastructures. The existing Chau Tau area, Lok Ma Chau Boundary Control Point and Ha Wan Tsuen will be developed in this phase to provide the lands for I&T use. Majority of these areas consist of road connection from existing road networks. The future key access roads for the above-mentioned areas will be implemented under this phase.

2.10.2.2 The major site formation and infrastructure works in this development phase will include:

- Site formation and development works for one “Public Housing” (“RSc”) site, one “Dedicated Rehousing Estate” (“DRE”) site, village resite and one “Private Housing” (“R1”) site at south-west of the Project area
- Site formation and development works for “Other Specified Uses” (“OU”) sites for key infrastructures including EPP, food waste pre-treatment facilities, FWSR and RWSR, STLMC WRP, DCS, sewerage pumping stations (SPSS), stormwater pumping stations (SmPSS), ESS, RTS, refuse collection point (RCP), etc.
- Site formation and development works for “Government, Institution or Community” (“G/IC”) sites
- Site formation and development works for “Other Specified Uses (Innovation and Technology)” (“OU(I&T)”) sites and “OU(LSW)” sites
- Site formation and development works for “Education” (“E”) sites
- Primary Distributor Road P1 and associated interchange/junction works connecting with San Sham Road, Castle Peak Road and San Tin Interchange
- District Distributors Road D1 (portion), D2 (portion), D3, D4 and D6, associated interchange/junction works connecting with San Tin Highway and Castle Peak Road, local roads, pedestrian connectivity including footbridge and subway, and associated pedestrian walkway and cycle tracks
- Common Utilities Enclosure (CUE) along the roads and utilities laying works for future development of relevant sites, such as watermains, power supply cables, DCS pipes, telecommunication cables, etc.
- Associated open spaces and amenity areas

2.10.3 Main Phase

2.10.3.1 Main phase comprises mainly the I&T lands at north-west of the Project area and the areas to the south of San Tin Highway. The development in this phase is to support mass population intake in Year 2034 and provide second batch of lands for I&T use. The future access roads for this area will be implemented under this phase. There will be interface with NOL in this phase.

2.10.3.2 The major site formation and infrastructure works in this development phase will include:

- Site formation and development works for “RSc” and “R1” sites at south and south-east of the Project area
- Site formation and development works for “OU” sites for key infrastructures including DCS, ESSs, PTI, FSD facilities, etc.
- Site formation and development works for “G/IC” sites
- Site formation and building works for “OU(I&T)” sites at north-west and south-east of the Project area
- Site formation and development works for “E” sites
- District Distributors Road D1 (portion), D2 (remaining portion) and D5, associated interchange/junction works connecting with San Tin Highway and Kwu Tung Road, local roads, pedestrian connectivity including footbridge and subway, and associated pedestrian walkway and cycle tracks
- CUE along the roads and utilities laying works for future development of relevant sites, such as watermains, power supply cables, DCS pipes, telecommunication cables, etc.
- Associated open spaces and amenity areas

2.10.4 Remaining Phase

2.10.4.1 Remaining phase is the last phase and the remaining development at the area surrounding San Tin Station and proposed station near Chau Tau will be completed. It mainly comprises residential, mixed use and government land.

2.10.4.2 The major site formation and infrastructure works in this development phase will include:

- Site formation and development works for “RSc” site at south of the Project area
- Site formation and development works for “Other Specified Uses (Mixed Use)” (“OU(MU)”) sites at proposed San Tin Station and proposed station near Chau Tau including the associated TIHs
- Site formation and development works for “G/IC” sites for Cultural and Recreational Complex and Wetland Conservation Park Management Office
- District Distributors Road D1 (remaining portion), local roads connecting the sites with existing and completed road network and associated pedestrian walkway and cycle tracks
- Utilities laying works for future development of relevant sites, such as watermains, power supply cables, DCS pipes, telecommunication cables, etc.
- Associated open spaces and amenity areas

2.10.5 Existing Brownfield Interface with New Development

2.10.5.1 The potential interface issues which could arise during the implementation stages have been assessed within individual chapters (e.g. air quality/construction dust, construction noise, and visual impacts on existing and planned sensitive receivers). Where required, mitigation measures have been recommended to avoid or minimise potential impacts. A review of existing land uses (with a particular focus on sites currently occupied by brownfield operations) and the phasing plan was also undertaken to identify any locations where other impacts may arise (e.g. population intake at locations adjacent to existing brownfield operations). In most cases the population moves in after clearance of the surrounding brownfield sites. As a result, any potential interface issues are minimised through the development phasing.

2.11 Concurrent Projects

- 2.11.1.1 The EIA has assessed the potential cumulative impacts of the Project and associated works that may arise through interaction or in combination with other existing, committed and planned developments in the vicinity of the Project and associated works. In addition, interactions between different impacts (i.e. synergistic impacts) for key sensitive receptors have also been considered.
- 2.11.1.2 Several major projects are identified in the vicinity of the assessment area as having the potential to run concurrently with the proposed Project and hence have the potential to result in cumulative impacts on the environment. The planned construction period and a brief description of the projects identified has been summarised in **Table 2.9**. Many of the projects will be completed in advance of the construction programme for the Project (i.e. are not concurrent projects), and due to their nature, potential cumulative impacts with the Project are not anticipated. The location of the remaining projects for which potential cumulative impact may arise is illustrated in **Figure 2.15**. Cumulative impacts from the concurrent projects have been assessed in the individual sections of this EIA Report and summarised in **Table 2.9**.
- 2.11.1.3 During the subsequent detailed design stage of the Project, it is proposed to conduct an environmental review to collate any further available information to update the cumulative impact assessment, including but not limited to the implementation programme of concurrent projects.

Table 2.9 Summary of Potential Cumulative Impacts

Project	Project Proponent	Tentative Construction Programme		Brief Description	Potential Cumulative Impact	
		Start	Complete		Construction	Operation
Development of Lok Ma Chau Loop – Main Works Package 1	Civil Engineering and Development Department	The construction of site formation and infrastructure works commenced in July 2021 for expected completion in phases in around 6 years		The main works package includes the site clearance and formation within the Loop, and engineering infrastructure works supporting Phase 1 development of the HSITP, including Western Connection Road and Direct Road Link for connection with the Loop, local roads, sewerage, drainage, water supply and landscaping works.	<ul style="list-style-type: none"> • Ecology • Fisheries • Air Quality • Noise 	<ul style="list-style-type: none"> • Ecology • Fisheries • Air Quality • Noise
Advance Site Formation and Engineering Infrastructure Works at Kwu Tung North and Fanling North New Development Areas	Civil Engineering and Development Department	Construction commenced in September 2019 for expected completion in phases in around 6 years.		The project comprises mainly the following: <ul style="list-style-type: none"> - Site formation in the KTN and FLN NDA; - Construction of the Fanling Bypass (Eastern Section) connecting the FLN NDA to Fanling Highway, about 10 km of local roads and about 10 km of footpaths, and about 4 km cycle tracks within the NDA area, and associated junction/road improvements; - Engineering infrastructure works including drainage, sewerage, waterworks, landscaping works and slope works; and - Part expansion and upgrading of Shek Wu Hui Sewage Treatment Works ("SWHSTW"); 	<ul style="list-style-type: none"> • Air Quality • Noise 	<ul style="list-style-type: none"> • Air Quality • Noise

Project	Project Proponent	Tentative Construction Programme		Brief Description	Potential Cumulative Impact	
		Start	Complete		Construction	Operation
Remaining Phase of Site Formation and Engineering Infrastructure Works at Kwu Tung North and Fanling North New Development Area – Detailed Design and Site Investigation	Civil Engineering and Development Department	The detailed design of site formation and infrastructure works under Remaining Phase of the NDA development commenced in end December 2019 in phases for target completion of works in 2031.		The works mainly covers the following: - Site formation in the Kwu Tung North (KTN) and Fanling North (FLN) New Development Area (NDA) for housing, community, commercial and other developments as well as engineering infrastructure works; and - Engineering infrastructure works including Fanling Bypass (Western Section), Po Shek Wu Road Flyover, new interchanges together with widening of Fanling Highway for connection with KTN NDA, local roads, cycle tracks, drainage, sewerage, waterworks, pumping stations, fresh water and flushing water service reservoirs, and landscaping works.	<ul style="list-style-type: none"> • Air Quality 	<ul style="list-style-type: none"> • Air Quality • Noise
Strategic Feasibility Study on The Development of Wetland Conservation Parks System under The Northern Metropolis Development Strategy	Agriculture, Fisheries and Conservation Department	Study is under feasibility study stage and yet to be concluded. The construction programme is yet to be confirmed. The potential cumulative impact is hence not assessed.		This consultancy study is to study the feasibility of the development of Wetland Conservation Parks System in Northern Development Area.	<ul style="list-style-type: none"> • Ecology • Fisheries 	<ul style="list-style-type: none"> • Ecology • Fisheries
Northern Link Main Line (NOL)	Highways Department	2025	2034	The proposed NOL includes a railway of about 10.7 kilometres between the Kam Sheung Road Station and KTU Station, with three intermediate stations at San Tin, Ngau Tam Mei and Au Tau.	<ul style="list-style-type: none"> • Ecology • Air Quality • Noise • Land Contamination • Landscape and 	<ul style="list-style-type: none"> • Noise • Landscape and Visual

Project	Project Proponent	Tentative Construction Programme		Brief Description	Potential Cumulative Impact	
		Start	Complete		Construction	Operation
					Visual	
Northern Link (NOL) Spur Line	Highways Department	Study is under Planning Stage. The construction programme and design information not available at this stage. The potential cumulative impact is hence not assessed.		The potential Northern Link Spur line includes a railway between proposed Kwu Tung Station with intermediate stations at Chau Tau to Lok Ma Chau Loop Station.	<ul style="list-style-type: none"> • Air Quality • Noise • Ecology • Land Contamination • Landscape and Visual 	<ul style="list-style-type: none"> • Noise Landscape and Visual
Ngau Tam Mei New Development Area (Land Use Review Study for Ngau Tam Mei Area – Feasibility Study)	Planning Department	Land use review study is commissioned in 2021. The construction programme is yet to be confirmed. The potential cumulative impact is hence not assessed.		Study will ascertain the feasibility of comprehensive development of the Ngau Tam Mei area, propose broad land uses, identify supporting infrastructure, and recommend necessary follow-up study and possible implementation approach	<ul style="list-style-type: none"> • Air Quality • Noise • Ecology • Landscape and Visual 	<ul style="list-style-type: none"> • Air Quality • Noise
Strategic Study on Major Roads beyond 2030 - Feasibility Study	Transport Department	Study had been commissioned from Dec 2020 to Apr 2023. The construction programme is yet to be confirmed.		Study will explore the layout of territory-wide railway and major road infrastructure and conduct preliminary engineering and technical assessments for the alignments and supporting facilities, so as to ensure that the related planning will complement or even reserve capacity to meet the overall long-term development needs of Hong Kong, including the Northern Metropolis Development Strategy and more.	<ul style="list-style-type: none"> • Air Quality • Noise 	<ul style="list-style-type: none"> • Air Quality • Noise

Project	Project Proponent	Tentative Construction Programme		Brief Description	Potential Cumulative Impact	
		Start	Complete		Construction	Operation
Drainage Improvement in Northern New Territories - Drainage Improvement Works in San Tin - Remaining Works	Drainage Services Department	Study is under Planning and Design Stage. The construction programme is yet to be confirmed.		The project comprises river improvement works, construction of box culvert and associated flood prevention facilities in San Tin West. The project comprises river improvement works, construction of box culvert and associated flood prevention facilities in San Tin West.	<ul style="list-style-type: none"> • Air Quality • Noise • Ecology • Landscape and Visual 	-