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1. INTRODUCTION

1.1 Project Background

- 1.1.1.1 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 there on a similar scale of the Fanling or Sheung Shui New Towns. In 2014, the Government commissioned the Preliminary Feasibility Study on Developing NTN (referred hereafter as “the Preliminary Study”) and an area in San Tin / Lok Ma Chau (STLMC) was identified as having potential for further development. In October 2016, a Broad Land Use Concept Plan (BLCP) of the area was promulgated in the public engagement of “Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030” (Hong Kong 2030+).
- 1.1.1.2 Following the announcement of advancing the studies on developing brownfield sites in the NTN in the 2018 Policy Address and the acceptance of the eight land supply options recommended by the Task Force on Land Supply in February 2019, the Feasibility Study on STLMC Development Node (STLMC FS) as the first phase development of NTN was jointly commissioned by the Civil Engineering and Development Department (CEDD) and the Planning Department (PlanD) in September 2019 to further develop the BLCP into a Preliminary Outline Development Plan (PODP) and confirm its feasibility. The PODP was presented to the Legislative Council in mid-2021 in the form of an Initial Land Use Plan.
- 1.1.1.3 In October 2021, the 2021 Policy Address proposed to expand STLMC Development Node into San Tin Technopole together with the Hong Kong-Shenzhen Innovation and Technology Park (HSITP) at the Loop. By making use of the land to be released by the Lok Ma Chau Boundary Control Point (LMC BCP) upon commissioning of the new Huanggang Port with co-location arrangement, and replanning the rural areas and fishponds around LMC BCP, it is proposed to increase the land supply for innovation and technology (I&T) development so as to achieve industry clustering effect with economy of scale. It is also proposed to increase the housing supply in San Tin Technopole to help address the housing shortage in the territory, in which some of the units can be used as talent apartments for I&T enterprises and research institutes. The Northern Metropolis has been incorporated in the Conceptual Spatial Framework promulgated in the Final Report of Hong Kong 2030+.
- 1.1.1.4 In the same month, CEDD and PlanD jointly commissioned AECOM Asia Co. Ltd. (AECOM) to undertake the Investigation Study on STLMC Development Node (hereinafter referred to as “the Project”) to take forward the San Tin Technopole initiative and formulate the Recommended Outline Development Plan (RODP) for STLMC area, carry out engineering and technical assessments including the statutory Environmental Impact Assessment (EIA), and conduct public engagement (PE) to facilitate public discussions and foster consensus building. A 2-month PE was conducted between June and August 2023 to solicit public views on the RODP. Taking into account the public views collected in the PE, planning and engineering considerations, technical assessments as well as departmental comments and advice, a Revised RODP was formulated.
- 1.1.1.5 According to the Revised RODP, STLMC area will be developed into an I&T hub and a new community providing about 50,000 to 54,000 flats for a new population of about 147,000 to 159,000. It will generate about 165,000 jobs including 120,000 jobs on I&T sites. It will be an integral part of San Tin Technopole, providing ample amount of I&T land in various sizes for different I&T uses, as well as an integrated community with wide range of commercial, retail, community, recreational and cultural facilities.

1.2 The Assignment

1.2.1.1 The Project includes the following main objectives:-

- (a) to review the PODP formulated under the STLMC FS, taking into account the results of stakeholder engagement, the latest NOL scheme (available information at the time of preparation of this EIA report), including the proposed San Tin Station and proposed station near Chau Tau as well as the land to be released from LMC BCP, existing fishponds north of San Tin Tsuen Road, existing rural area and fishponds near Chau Tau Tsuen and existing rural area near Pang Loon Tei, to conduct market positioning and identify the potential for integrated I&T uses of the formed land, and to formulate the RODP supported by engineering and technical assessments for the STLMC DN to meet housing, economic and development needs of Hong Kong beyond 2030 in a carbon-neutral community;
- (b) to adopt the Integrated Approach in land use layout formulation, and design the STLMC DN as appropriate and deliver Planning, Urban Design and Landscape Design Frameworks, Recommended Master Urban Design Plan (MUDP) and Recommended Landscape Master Plan (LMP), Recommended Urban Design Scheme Plan (UDSP) and Design Illustrations to demonstrate the design proposals/solutions to the proposed Developments, including specific areas, precincts, key zones, nodes and facilities between major uses and infrastructure of the STLMC DN, incorporated with feasible smart, green and resilient (SGR) framework / initiatives, and justified assessments on pedestrian and cyclist connectivity, visual, landscape, streetscape, air ventilation, infrastructure, architectural design, feasibility, implementation modes, etc. that lay a solid basis for consolidating design scopes/guidelines for follow-up in the design and construction stage and facilitate the future implementation of the urban design and landscape design proposals;
- (c) to formulate Urban Design and Landscape Design Guidelines as well as SGR Guidelines to create a green, high quality and sustainable townscape and a liveable and future-proof environment;
- (d) to provide an overall implementation plan to take forward the SGR framework/initiatives, and demonstrate how the objective for a carbon neutral community could be achieved in the STLMC DN;
- (e) to ascertain the infrastructure requirements of the proposed development and carry out the preliminary design;
- (f) to carry out economic and market analysis in the formulation of land use and development proposals, including the positioning and commercial viability of the proposed land uses, taking into account the latest planning circumstance, development and trend;
- (g) to confirm the feasibility and sustainability of the development and infrastructure proposals and RODP by undertaking a series of technical assessments on aspects including traffic and transport, environment, ecology, air ventilation, geotechnical, land requirement, site formation, drainage, sewerage, water supply and utilities, land contamination, socio-economic, sustainability, landscape and visual, SGR framework/initiatives, carbon appraisal, urban design, etc.;
- (h) to conduct ecological survey arising from the expanded area from original assignment and review on the compensation and mitigation measures on affected ponds / wetland as well as to undertake EIA study and obtain statutory approval for the proposed

development and the associated engineering infrastructures recommended in the RODP under the Environmental Impact Assessment Ordinance (EIAO);

- (i) to formulate a public engagement strategy and conduct public engagement exercise on the RODP, to explore good development concepts from the community, and gauge public feedback through engagement activities;
- (j) to formulate the implementation strategy and programme including land resumption / clearance and development mode with cost and revenue estimates;
- (k) to serve as a reference for detailed design in the next stage based on the findings of assessments;
- (l) to conduct site investigation and site supervision; and
- (m) to adopt a capacity-creating approach as embedded in the Hong Kong 2030+ in land use and infrastructure planning of the Services. The approach aims to pro-actively plan with visions in advance of the additional capacity to enhance the city's liveability for our existing and future population, as well as to cater for demands from unforeseen challenge and opportunities in a timely manner.

1.3 EIA Study Brief

1.3.1.1 A Project Profile for the Project (No. PP-621/2021) based on the original 320 ha identified in STLMC FS and the about 20 ha to be released from the LMC BCP was submitted to the EPD on 20 May 2021 for application for an EIA Study Brief under section 5(1)(a) of the EIAO. The EIA Study Brief (No. ESB-340/2021) was issued on 30 June 2021 under the EIAO. However, due to the latest policy strategy in developing San Tin Technopole, the boundary of the Project was expanded to about 610 ha ([Figure 1.1](#)) to accommodate the new demand for land uses and associated infrastructure. San Tin Technopole covers both the HSITP under construction at the Loop and the San Tin / Lok Ma Chau area. For the purpose of this EIA Study, the term San Tin Technopole would be used interchangeably with San Tin / Lok Ma Chau area and the Project. With reference to the Revised RODP, the Project area as set out in the EIA SB issued in June 2021 has been expanded. In this connection, confirmation from EPD has been sought on the validity of the EIA SB issued in June 2021 pursuant to Clause 6.2 of the EIA SB. EPD confirmed that the EIA SB issued in June 2021 remains applicable for the latest project area as all the potential environmental issues which need to be assessed in the EIA are already covered in the EIA SB.

1.4 Revised Recommended Outline Development Plan

1.4.1.1 The RODP has been formulated based on the PODP under the STLMC FS. Subsequently, public comments were received during the 2-month public engagement exercise. Taking into consideration the public comments, the Revised RODP ([Figure 2.1](#)) was formulated. The underlying planning principles, and the technical assessments will be discussed in **Section 2**.

1.5 Designated Project under EIAO

1.5.1.1 The Project covers an area of 610 ha, is classified as a Designated Project (DP) by virtue of the following item in Schedule 3 of the EIAO:

1: An urban development or redevelopment project covering an area more than 50 ha.

1.5.1.2 In addition, the Project also constitutes the DP elements in Part I, Schedule 2 of the EIAO as described in **Table 1.1** and illustrated in [Figure 1.2](#). Details of the scope of each DP element are presented in Section 2.

Table 1.1 Schedule 2 Designated Projects in this Project

Ref. No.	Schedule 2 Designated Project		Work Component /Reference in Revised RODP
DP1 ¹	A.1	A carriageway for motor vehicles that is an expressway, trunk road, primary distributor road or district distributor road	Construction and operation of primary distributor road P1, district distributor road D1, D2, D3, D4, D5 and D6.
DP2 ¹	F.1	Sewage treatment works with an installed capacity of more than 15,000m ³ per day	Construction and operation of STLMC Effluent Polishing Plant
	F.2	Sewage treatment works with an installed capacity of more than 5,000m ³ per day; and a boundary of which is less than 200m from the nearest boundary of an existing or planned residential area and educational institution	
DP3 ¹	F.4	A facility for generating, from sewage effluent treated by a sewage treatment plant, reclaimed water for use by the general public	Construction and operation of STLMC Water Reclamation Plant
DP4 ²	G.2	A refuse transfer station	Construction and operation of a refuse transfer station
DP5 ²	H.1	A 400kV electricity substation and transmission line	Construction and operation of two 400kV electricity substations
DP6 ¹	I.1	A drainage channel or river training and diversion works located less than 300 m from the nearest boundary of an existing or planned conservation area	Revitalisation works (i.e. river training, diversion works) for San Tin Eastern Main Drainage Channel are located less than 300m from Conservation Area ³
DP7 ¹	P.1	A residential or recreational development, other than New Territories exempted houses, within Deep Bay Buffer Zone 2	Recreational development for proposed Sites O.1.1, O.1.2, and O.1.3 (as open space) encroach into Deep Bay Buffer Zone 2

Note:

- 1 Subject to an Environmental Permit application for both construction and operation phases of the DP under this EIA Study
- 2 Subject to separate EIA Study, as required
- 3 The future zonings of the concerned 'Conservation Area' as shown on [Figure 1.2](#) are subject to change due to the land use proposals as reflected in the Revised RODP.

1.5.1.3 Some portions of the Project area are located within Conservation Area (CA) and Site of Special Scientific Interest (SSSI). Construction involving earthworks and building works within CA and SSSI would fall into the category of Item Q.1, Part I, Schedule 2 of EIAO. However, as the concerned zonings of the CA and SSSI are subject to change before commencement of construction works in the future, areas within the Project boundary that are currently within CA and SSSI zone would no longer be zoned as CA and SSSI respectively. As such, they are not considered as a Schedule 2 DP.

1.5.1.4 STEMDC and STWMDC are currently located at and within 300m from the boundary of CA zone respectively. Revitalisation works would also fall into the category of Item I.1, Part I, Schedule 2 of EIAO. However, as STWMDC would be located more than 300m from the CA zone following the change in land use as described in **Section 1.5.1.3**, revitalisation works at STWMDC is not considered as a Schedule 2 DP. For the case of STEMDC, as a

portion of the river channel would still be within 300 m from the CA zone that lies adjacent to the Project boundary, revitalisation works is being considered as a Schedule 2 DP.

- 1.5.1.5 Apart from the Schedule 2 DPs presented in **Table 1.1**, there are a number of non-DP elements in the Revised RODP as summarised in **Table 1.2**. Details are presented in **Section 2** with locations shown in **Figure 2.1**.

Table 1.2 Summary of Non-Designated Projects

Non-Designated Project	Sub-Element
Residential Development	Public Housing Site (RSc)
	Private Housing - Zone 1 (R1)
	Village Type Development (V)
Government, Institutional or Community (G/IC)	Divisional Police Station
	Fire Station
	Ambulance Depot
	Library
	Sports Centre
	Market
	Swimming Pool Complex
	EcoHub
Education (E)	Primary and Secondary Schools
Open Space (O)	Recreational Facilities and Landscaping
Amenity (A)	Roadside amenity
Green Belt (GB)	-
Other Specified Uses (OU)	Other Specified Uses (Mixed Use) - Zone 1 (OU(MU)1)
	Other Specified Uses (Mixed Use) - Zone 2 (OU(MU)2)
	Other Specified Uses (Innovation and Technology) (OU(I&T))
	Other Specified Uses (Green Fuel Station) (OU(GFS))
	Other Specified Uses (Logistics, Storage and Workshop) (OU(LSW))
	Other Specified Uses (Railway Ancillary Facilities) (OU(RAF))
	Other Specified Uses (Ventilation Building) (OU(VB))
	District Cooling System (OU(DCS))
	Reclaimed Water Reservoir and Fresh Water Reservoir (OU(WSR))
	Refuse Collection Point (OU(RCP))
	Public Transport Interchange (OU(PTI))
	Sewage Pumping Station (OU(SPS))
	Stormwater Pumping Station (OU(SmPS))
	Electrical Substation (OU(ESS))
Roads	Local roads

- 1.5.1.6 If there are any future change(s) after the approval of this EIA Report, the following steps will be taken:

- (a) Should the change(s) involve a DP item under Schedule 2 of the EIAO, the requirements under the EIAO will be complied with; and
- (b) Should the change(s) not involve any DP items under Schedule 2 of the EIAO, prevailing planning mechanisms and standards will be followed and relevant EIA findings will be conformed to.

1.6 Purpose of the EIA Study

1.6.1.1 The purpose of this EIA study is to provide information on the nature and extent of environmental impacts arising from the construction and operation of the Project and associated works that will take place concurrently. This information will contribute to decisions by the Director of Environmental Protection on:

- (a) the overall acceptability of any adverse environmental consequences that are likely to arise as a result of the Project and its staged implementation;
- (b) the conditions and requirements for the detailed design, construction and operation of the Project to mitigate against adverse environmental consequences wherever practicable; and
- (c) the acceptability of residual impacts after the proposed mitigation measures are implemented.

1.7 Objectives of this EIA Study

1.7.1.1 The objectives of the EIA study as stated in the EIA Study Brief (No. ESB-340/2021) are as follows:

- (a) to describe the Project and associated works together with the requirements and environmental benefits for carrying out the project;
- (b) to identify and describe the elements of the community and environment likely to be affected by the Project, and/or likely to cause adverse impacts to the Project, including both the natural and man-made environment and the associated environmental constraints;
- (c) to identify and quantify emission sources and determine the significance of impacts on sensitive receivers and potential affected uses, and to propose measures to mitigate these impacts;
- (d) to identify and quantify waste management requirements and to propose measures to mitigate these impacts;
- (e) to identify and quantify contaminated land within any Project area for development works and to propose measures to avoid disposal in the first instance;
- (f) to identify and quantify any potential losses or damage to flora, fauna and natural habitats and fisheries activities/resources and to propose measures to mitigate these impacts;
- (g) to identify any potential landscape and visual impacts and to propose measures to mitigate these impacts;
- (h) to identify any adverse impacts on sites of cultural heritage and to propose measures to mitigate these impacts;
- (i) to identify and quantify any potential hazard to life and to propose measures to mitigate these impacts if required;
- (j) to identify any landfill gas hazard to sensitive receivers of the Project located within the consultation zone of Ngau Tam Mei Landfill and to propose measures to mitigate these impacts;
- (k) to identify any impacts from electric and magnetic field and to propose measures to mitigate these impacts;
- (l) to propose the provision of infrastructure or mitigation measures to minimise pollution, environmental disturbance and nuisance during construction and operation of the Project;
- (m) to investigate the feasibility, effectiveness and implications of the proposed mitigation measures;
- (n) to identify, predict and evaluate the residual (i.e. after practicable mitigation) environmental impacts and the cumulative effects expected to arise during construction and operation of the Project in relation to the sensitive receivers and potential affected uses;
- (o) to identify, assess and specify methods, measures and standards, to be included in the detailed design, construction and operation of the Project which are necessary to mitigate these residual environmental impacts and cumulative effects and reduce them to acceptable levels;
- (p) to investigate the extent of the secondary environmental impacts that may arise from the proposed mitigation measures and to identify constraints associated with the mitigation measures recommended in the EIA study, as well as the provision of any necessary modification;
- (q) to design and specify the environmental monitoring and audit requirements;
- (r) to identify any additional studies necessary to implement the mitigation measures or monitoring and proposals recommended in the EIA report; and
- (s) to identify DP(s) listed under Schedule 2 of the EIAO as part of the Project for assessment under the EIA study.

1.8 Structure of the EIA Report

1.8.1.1 The background of the Project, purpose and objectives of this EIA study are introduced in this section. A description of the Project and details of options consideration are provided in **Section 2**. **Sections 3 to 15** detail the results of the environmental impact assessment

of each key subject area, covering relevant legislation, environmental conditions, assessment criteria, methodology, and assessment findings.

1.8.1.2 Sections 3 to 15 are outlined as follows:

- Section 3: Air Quality Impact
- Section 4: Noise Impact
- Section 5: Water Quality Impact
- Section 6: Sewage and Sewerage Treatment Implications
- Section 7: Waste Management Implications
- Section 8: Land Contamination
- Section 9: Landfill Gas Hazard
- Section 10: Ecological Impact
- Section 11: Fisheries Impact
- Section 12: Cultural Heritage Impact
- Section 13: Hazard to Life
- Section 14: Landscape and Visual Impact
- Section 15: Electric and Magnetic Fields

1.8.1.3 An outline of the requirements for the Environmental Monitoring and Audit (EM&A) programme is presented in **Section 16**. The EM&A programme is presented in detail in a separate EM&A Manual. A detailed implementation schedule of the recommended mitigation measures is provided in **Section 17**. A summary of environmental outcomes and conclusions is presented in **Section 18**.